U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2005-101-EA

CASEFILE/PROJECT NUMBER: Keystone Allotment (06605)

PROJECT NAME: Grazing Permit Renewal and name change from Per Sten Johnson to Keystone Ranch Ltd.

LOCATION OF PROPOSED ACTION: Rio Blanco County and Moffat County

LEGAL DESCRIPTION:

Allotment			Legal Description		
Number:	**Name**	**BLM Acres**	**Township:**	**Range:**	**Section(s)/Lots/or Portions of**
06605	Keystone	29598	4N	96W	Sec 8, 9, 17-36
			4N	97W	Sec 25
			3N	97W	Sec 1, 8-17, 20-29, 32-36
			2N	97W	Sec 1-5
			3N	96W	Sec 2-15, 17-24, 26-34
			3N	95W	Sec 18

APPLICANT: Per Sten and Iva Joy Johnson, and David and Patty Johnson (0501489)

ISSUES AND CONCERNS: None

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: Dave and Patty Johnson operate the Keystone ranch on the Keystone grazing allotment (#06605) located in northern Rio Blanco county and southern Moffat county. The allotment is fenced into seven separate pastures, each of them with generally well maintained water developments, allowing for improved distribution. Under the current grazing permit livestock grazing is permitted on public land year round. Mr. Johnson rotates cattle through the allotment using each of the seven pastures for a part of the year. The grazing season starts March first. Generally by mid March livestock rotate from private land into three of the lower elevation pastures (Pinto Gulch, Ted's Gulch and Twin Wash). While in these three pastures cattle are well distributed and utilization levels are generally low. From mid June until August cattle are in the western-most pasture (Blue Haven), when from there they are moved onto the northern most, highest elevation pasture (Kaiser/Citadel) and stay there through September. As of October first until whenever the snow gets too deep the herd is split between

the Indian Valley pasture and the Buck Pasture. There is some occasional winter use in the Pinto Gulch pasture as livestock pass through on their way back to private land after being snowed out of Indian Valley. Most years by late November or early December livestock are back on private land where they spend the remainder of the winter being fed.

The table below is an acreage breakdown by land status and by pasture of all land within the Keystone allotment. The Johnsons also have agricultural leases on all state lands occurring within the allotment.

BREAKDOWN OF ACRES WITHIN KEYSTONE RANCH

Allotment #06605 Pasture	BLM Acres	State Acres	Private Acres	Total Acres
Pinto Gulch	**5074**	174	1347	6595
Teds Gulch	**4660**	0	607	5267
Twin Wash	**4533**	648	575	5756
Blue Haven	**6373**	646	949	7968
Kaiser/Citadel	**5101**	637	757	6495
Indian Valley	**2113**	0	3930	6043
Buck Pasture	**1655**	0	581	2236
Hay Pasture B	**89**	0	453	542
Totals:	**29598**	**2105**	**9199**	**40902**

Annual precipitation ranges from approximately 10-12 inches in the extreme western side of the allotment in the Blue Haven pasture to 16-20 inches in the higher elevation areas of the northern Kaiser/Citadel and Buck pastures. The majority of the allotment falls into the 12-16 inch precipitation zone. Snowfall accounts for about 45% of annual precipitation, occurring from mid October to late April with accumulation from January through March. Elevations throughout the allotment range from around 7800 feet in the Kaiser/Citadel pasture and along the southern edge of the allotment on Colorow Mountain to just under 5800 feet where Deep Channel wash leaves the western part of the Pinto Gulch pasture. Vegetation ranges from Douglas fir, aspen and mountain shrub in the steep higher elevations to sage brush and greasewood communities in the deeper soils of the lower elevations. In the mid-elevation ranges extensive stands of pinyon/juniper tend to occur on shallower soils and to some degree are encroaching out into grass dominated communities.

Grazing allotments in the White River Field Office (WRFO) have been placed into one of three management categories that define the intensity of management: (1) improve, (2) custodial and (3) maintain. These categories define rangeland management objectives based on analysis of an allotment's resource characteristics, potential, management opportunities and needs. Based on prior analysis of the allotment's resource characteristics and potential, the Keystone allotment has been designated as an "Improve" category allotment, which is a more intensive management category. Drainages throughout the allotment have down-cut as a result of historic grazing practices in the early 20th century. Historic long-term over-use of valley bottoms and inadequate distribution has resulted in cheatgrass presence in most plant communities and production below optimal site potential. Terrain limits livestock accessibility on some of the steeper areas of public lands making these areas less vulnerable to livestock grazing. There are close to two and ½ miles of riparian systems associated with the Keystone allotment. These systems are generally

in fair condition though noxious weeds especially perennial pepperweed *(Lepidium latifolium)* are a concern. The permittee has an aggressive and successful noxious weed control program in place and, other than perennial pepperweed, has generally eradicated or controlled noxious weeds throughout the Keystone allotment.

A. Proposed Action (Allotment Management Plan): Renew the grazing permit for the Keystone Ranch for a ten year period as outlined in the proposed grazing schedule below and change legal ownership from Per Sten Johnson to Keystone Ranch, Ltd. The name change is administrative only and will have no impact on the livestock grazing operation or the allotment. The grazing schedule will be incorporated into the grazing permit (0501489) and will also function as an Allotment Management Plan (AMP). A Term and Condition on the permit will require the permittee to follow the prescribed grazing schedule within the limits of flexibility as outlined in this Environmental Assessment (EA). Active AUMs on the *Grazing Application for Permit Renewal* have been adjusted by pasture to more accurately reflect the carrying capacity of the rangelands and assure that the standards for public land health are met on public lands within this allotment.

The percent public land (the percentage of AUMs generated on BLM land in relation to the total combined BLM and private AUMs) was recalculated for the allotment by pasture. Advances in technology (e.g., computer calculations using ArcView and Excel spreadsheets) produced more accurate forage allocation based on land ownership, allowing the adjustment in percent public land by pasture (see Range section of this document). Scheduled grazing use (on BLM, private and State lands combined) has remained the same but due to the change in percent public land the permitted BLM AUMs has increased by 72 AUMs. This increase in AUMs is for billing purposes only and does not reflect any increase in actual livestock grazing.

The proposed grazing schedule was developed in conjunction with the grazing permittee (David Johnson) and is outlined in the *Grazing Application for Permit Renewal* form signed by Mr. Johnson on November 15, 2005. Objectives of this allotment management plan are:

- To maintain or enhance a healthy rangeland vegetation composition and species diversity, capable of supplying forage at a sustained yield to meet the current forage demands for livestock and wildlife.

- To provide for adequate forage plant growth and or re-growth opportunities necessary to: replenish plant food reserves and produce sufficient seed to meet the reproduction needs necessary to maintain an ecological presence in the plant community.

- To establish a grazing system where the permittee can use the pastures in this allotment to graze the range with a strategy that provides for plant growth requirements and provides for the most economical use of all forage resources available to ranch operation.

PROPOSED GRAZING PERMIT (0501489) FOR KEYSTONE RANCH

Allotment: Keystone #06605	Livestock		Date			BLM AUMs
Pasture Name:	#	Kind	On	Off	%PL	Scheduled
Twin, Ted's, Pinto	300	C	03/01	03/15	76%	112
Twin, Ted's, Pinto	400	C	03/16	04/15	76%	310
Twin, Ted's, Pinto	500	C	04/16	05/19	76%	425

PROPOSED GRAZING PERMIT (0501489) FOR KEYSTONE RANCH

Allotment: Keystone #06605	Livestock		Date			BLM AUMs
Pasture Name:	#	Kind	On	Off	%PL	Scheduled
Twin, Ted's, Pinto	525	C&B*	05/20	06/15	76%	354
Twin, Ted's, Pinto	617	C&B*	06/16	07/01	76%	247
Blue Haven	617	C&B*	07/02	08/10	82%	665
Hay B	25	B*	03/01	06/05	15%	12
Kaiser/Citadel	572	C-B*	08/11	10/01	80%	782
Buck	20	C	08/11	10/01	58%	20
Buck	110	C	10/02	11/15	58%	94
Indian Valley	482	C	10/02	11/15	34%	242
Indian Valley	300	C	11/16	12/31	34%	154
Indian Valley	150	C	01/01	02/28	34%	99
Pinto	150	C	01/01	02/28	75%	218
					Total	**3734**

*C = Cows, B = Bulls

Limits of Flexibility: The permittee will be allowed flexibility from the submitted plan of operation during the grazing year that does not require prior approval from BLM. This flexibility will be limited to on or off dates and number of animals to adjust to changing climatic conditions, forage variability, and operational needs. Flexibility of the on or off dates will be limited to 10 days either way provided total days of use do not exceed 10 days from the schedule approved in the allotment management plan. Livestock may not be turned in to spring pastures early unless pre-approved by the BLM. When livestock are turned in to a pasture late, unused AUMs within that given pasture may at the discretion of the permittee after communicating with the BLM, be used later in that grazing year. The permittee will also be able to adjust the number of animals by (+/-) 10% provided the total AUMs of use do not exceed the AUMs scheduled. These flexibilities will be accounted for when Actual Use forms are submitted.

Flexibilities that require approval by the BLM are adjustments made beyond the above criteria. BLM approved flexibilities and/or changes to this plan may be required due to such factors as forage influences from grazing, drought, fire, and/or water availability. The BLM, in conjunction with the grazing permittee, may also adjust this AMP if a situation develops in order to meet the Standards for Public Land Health.

Rangeland Improvements Necessary to Implement the Grazing System: No rangeland improvements (RI) are proposed to implement the grazing system. Future evaluations of allotment conditions may identify improvements that would aid in achieving objectives. In which case, a separate Environmental Assessment (EA) would be compiled to approve any such new RI on a site specific basis.

Monitoring and Evaluation: Four long-term trend monitoring sites within the Keystone allotment were established and read in 1981 and most recently read in 2005. Trend sites include a permanent, repeatable photo plot and a permanent, repeatable Daubenmire transect line to measure ground cover and frequency. Three more plots were established throughout the 2005 field season. All study sites were established in key areas to monitor rangeland condition and livestock grazing use. Plots were established under protocol developed in the *Grazing Allotment Monitoring Plan for the White River Resource Area*. The next cycle for reading all trend studies

will be in 4-5 years (2009, 2010) and again in 9-10 years (2014, 2015), prior to the future renewal of the grazing permit. Workload priorities and BLM staff capabilities will partially determine when trend studies are repeated.

Grazing Permit Terms and Conditions: The following terms and conditions as required by 43 CFR 4130.3 will be included in the grazing permit issued under this alternative:

1. Grazing use will occur as per the 2005 Allotment Management Plan Grazing Schedule (4130.3-1(a)), (EA# CO-110-05-101ea).

2. Grazing use authorized under this grazing permit/lessee may be suspended, in whole or in part, for violation by the permittee/lessee of any of the provisions of the rules or regulations now or hereafter approved by the Secretary of the Interior.

3. This grazing permit/lease is subject to cancellation, in whole or in part, at any time because of:

    a. Noncompliance by the permittee/lessee with rules and regulations now or hereafter approved by the Secretary of the Interior.
    b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based.
    c. A transfer of grazing preference by the permittee/lessee to another party.
    d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described herein.
    e. Repeated willful unauthorized grazing use

4. A grazing utilization limit averaging 60 percent of annual growth within key forage areas and averaging 50 percent of annual production for the entire allotment will be applied to public lands on the Keystone Allotment.

5. In order to improve livestock distribution on the public lands, all salt blocks and/or mineral supplements will not be placed within a 1/4 mile of any riparian area, wet meadow, or watering facility (either permanent or temporary) unless stipulated though a written agreement or decision in accordance with 43 CFR 4130.3-2(c).

6. Grazing fees are due upon issuance of a billing notice which will be based upon a submitted Actual Use form (after-the-fact-billing). Actual Use forms must be submitted to the BLM twice during the grazing year. These forms will be due within 15 days after completing the annual grazing use period in the spring and summer pastures (Pinto Gulch, Ted's Gulch Twin Wash, Blue Haven and Kaiser) and within 15 days after completing the annual grazing use period in the fall and winter pastures (Indian Valley and Buck Pasture).

7. In accordance with 43 CFR 4130.8-1(F): Failure to pay grazing bills within 15 days of the due date specified in the bill shall result in a late fee assessment. Payment made later than 15 days after the due date, shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR Sec. 4140.1(b) (1) and

shall result in action by the authorized officer under 43 CFR Secs. 4150.1 and 4160.1-2 (Trespass).

8. No grazing use can be authorized under this grazing permit/lease during any period of delinquency in the payment of amounts due in settlement for unauthorized grazing use.

9. The permittee or lessee must provide reasonable livestock grazing related administrative access across private and leased lands to the BLM for the orderly management and protection of the public lands, as outlined 43 CFR 4130.3-2(h).

10. It is unlawful for the permittee, agents or employees to knowingly disturb or collect cultural, historical or paleontological materials on public lands. If cultural, historical or paleontological materials are found, including human remains, funerary items or objects of cultural patrimony, the permittee is to stop activities that might disturb such materials, and notify the authorized officer immediately.

11. This grazing permit/lease is subject to the provisions of executive Order NO. 11246 of September 24, 1965, as amended, which sets forth nondiscrimination clauses. A copy of this order may be obtained from the authorized officer.

12. The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.

Acceptance and Approval of 2005 Keystone Ranch Allotment Management Plan (AMP):

Grazing Permittee: _____ _____
David Johnson Date

Prepared by: _____ _____
Mary Taylor, White River Range Staff Date

Approved by: _____ _____
White River Field Manager Date

B. Continuation of Current Management: This alternative would renew the expiring permit for a period of 10 years with no changes made in livestock kind, numbers, season of use, or type of use (active, suspended, nonuse). Livestock grazing use would continue as permitted based upon the following schedule:

CURRENT GRAZING PERMIT SCHEDULE

Allotment Number Allotment Name	Pasture	Livestock # and kind	Grazing period Begin - End	% Public Land	BLM AUMs scheduled
06605 Keystone	None specified	300 C	03/01 – 03/15	64%	95
		400 C	03/16 – 04/15		261
		500 C	04/16 – 06/15		642
		592 C	06/16 – 11/15		1906
		25 C	05/20 – 11/15		95
		300 C	11/16 – 02/28		663
				Total:	**3662**

Terms and Conditions:

You are required to submit actual grazing use reports at the end of the grazing season. You are required to make active use of your active grazing preference - any nonuse must have prior approval of the area manager.

* No supplemental feeds – except salt or mineral block – can be placed on public land without prior authorization from the area manager. ** The payment of your grazing fees is due on or before the due date specified in the grazing bill. If payment is not received within 15 days of the due date, you will be charged a late fee assessment of $25.00 or 10 percent of the grazing bill, whichever is greater, not to exceed $250.

C. No Action: This alternative consists of not issuing a grazing permit for livestock use. There would be no livestock grazing on public lands within the allotment on which it is currently permitted. This alternative would not be in compliance with the RMP decision to provide for livestock grazing as one of the acceptable multiple uses.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: none

NEED FOR THE ACTION:

BLM permit (0501489), which authorizes grazing on the Keystone allotment (#06605), expires on February 28, 2006. This permit is subject to renewal or transfer at the discretion of the Secretary of the Interior for a period of up to ten years. The Bureau of Land Management has the authority to renew the livestock grazing permit/lease consistent with the provisions of the *Taylor Grazing Act, Public Rangelands Improvement Act, Federal Land Policy and Management Act and the White River Resource area Resource Management Plan/Environmental Impact Statement.* The grazing permittee has a preference right to receive the permit, which is recognized as a primary use under the Land Use Plan, the White River Record of Decision and Approved Resource Management Plan. In order to graze livestock on public land, the livestock producer (permittee) must hold a grazing permit.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: pages 2-22 through 2-26

Decision Language: Livestock grazing will be managed as described in the 1981 Rangeland Program Summary (RPS). That document is the Record of Decision for the 1981 White River Grazing Management Final Environmental Impact Statement (Grazing EIS).

COMPLIANCE WITH SECTION 302 OF FLPMA RELATIVE TO THE COMB WASH GRAZING DECISION

A review of applicable planning documents and a thoughtful consideration of the new issues and new demands for the use of the public lands involved with this allotment have been made. This analysis concludes that the current multiple use allocation of resources is appropriate.

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for each of these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

STANDARDS FOR PUBLIC LAND HEALTH

	Current Situation			With Proposed Action		With No Grazing	
Standard	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Causative Factors**	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Achieving or Moving Towards Achieving**	**Not Achieving**
#1-Upland Soils							
Pinto Gulch	4074 acres	1000 acres	Cheatgrass/Historical grazing practices	4074 acres	1000 acres	4574 acres	500 acres
Ted's Gulch	4543 acres	117 acres	Cheatgrass/Historical grazing practices	4543 acres	117 acres	4601 acres	57 acres

STANDARDS FOR PUBLIC LAND HEALTH

	Current Situation			With Proposed Action		With No Grazing	
Standard	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Causative Factors**	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Achieving or Moving Towards Achieving**	**Not Achieving**
Twin Wash	3707 acres	826 acres	Cheatgrass/Historical grazing practices	3707 acres	826 acres	4120 acres	413 acres
Blue Haven	5832 acres	541 acres	Cheatgrass/Historical grazing practices	5832 acres	541 acres	6103 acres	270 acres
Kiaser/Citadel	5101 acres	0 acres	n/a	5101 acres	0 acres	5101 acres	0 acres
Indian Valley	1715 acres	398 acres	Cheatgrass/Historical grazing practices	1715 acres	398 acres	1914 acres	199 acres
Buck Pasture	1591 acres	64 acres	Cheatgrass/Historical grazing practices	1591 acres	64 acres	1623 acres	32 acres
Hay B	89 acres	0 acres	n/a	89 acres	0 acres	89 acres	0 acres
	6.2% of Total			6.2% of Total		3.0% of Total	
#2-Riparian Systems							
Pinto Gulch	1.5 mile	0	n/a	1.5 mile	0	1.5 mile	0
Ted's Gulch	0	0	n/a	0	0	0	0
Twin Wash	0.2 mile	0	n/a	0.2 mile	0	0.2 mile	0
Blue Haven	0.3 mile	0	n/a	0.3 mile	0	0.3 mile	0
Kiaser/Citadel	0	0	n/a	0	0	0	0
Indian Valley	0	0	n/a	0	0	0	0
Buck Pasture	0	0	n/a	0	0	0	0
Hay B	0	0	n/a	0	0	0	0
	0% of Total			0% of Total		0% of Total	
#3-Plant Communities							
Pinto Gulch	4074 acres	1000 acres	Cheatgrass/Historical grazing practices	4074 acres	1000 acres	4754 acres	500 acres
Ted's Gulch	4543 acres	117 acres	Cheatgrass/Historical grazing practices	4543 acres	117 acres	4601 acres	57 acres
Twin Wash	3707 acres	826 acres	Cheatgrass/Historical grazing practices	3707 acres	826 acres	4120 acres	413 acres
Blue Haven	5832 acres	541 acres	Cheatgrass/Historical grazing practices	5832 acres	541 acres	6103 acres	270 acres

STANDARDS FOR PUBLIC LAND HEALTH

	Current Situation			With Proposed Action		With No Grazing	
Standard	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Causative Factors**	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Achieving or Moving Towards Achieving**	**Not Achieving**
Kiaser/Citadel	5101 acres	0 acres	n/a	5101 acres	0 acres	5101 acres	0 acres
Indian Valley	1715 acres	398 acres	Cheatgrass/Historical grazing practices	1715 acres	398 acres	1914 acres	199 acres
Buck Pasture	1591 acres	64 acres	Cheatgrass/Historical grazing practices	1591 acres	64 acres	1623 acres	32 acres
Hay B	89 acres	0 acres	n/a	89 acres	0 acres	89 acres	0 acres
	9.9% of Total			9.9% of Total		4.9% of Total	
#4-Animal Communities							
Pinto Gulch	4074 acres	1000 acres	Cheatgrass/Historical grazing practices	4074 acres	1000 acres	4754 acres	500 acres
Ted's Gulch	4543 acres	117 acres	Cheatgrass/Historical grazing practices	4543 acres	117 acres	4601 acres	57 acres
Twin Wash	3707 acres	826 acres	Cheatgrass/Historical grazing practices	3707 acres	826 acres	4120 acres	413 acres
Blue Haven	5832 acres	541 acres	Cheatgrass/Historical grazing practices	5832 acres	541 acres	6103 acres	270 acres
Kiaser/Citadel	5101 acres	0 acres	n/a	5101 acres	0 acres	5101 acres	0 acres
Indian Valley	1715 acres	398 acres	Cheatgrass/Historical grazing practices	1715 acres	398 acres	1914 acres	199 acres
Buck Pasture	1591 acres	64 acres	Cheatgrass/Historical grazing practices	1591 acres	64 acres	1623 acres	32 acres
Hay B	89 acres	0 acres	n/a	89 acres	0 acres	89 acres	0 acres
	9.9% of Total			9.9% of Total		4.9% of Total	
#4-Special Status, T&E Species							
Pinto Gulch	4074 acres	1000 acres	Cheatgrass/Historical grazing practices	4074 acres	1000 acres	4754 acres	500 acres
Ted's Gulch	4543 acres	117 acres	Cheatgrass/Historical grazing practices	4543 acres	117 acres	4601 acres	57 acres

STANDARDS FOR PUBLIC LAND HEALTH

	Current Situation			With Proposed Action		With No Grazing	
Standard	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Causative Factors**	**Achieving or Moving Towards Achieving**	**Not Achieving**	**Achieving or Moving Towards Achieving**	**Not Achieving**
Twin Wash	3707 acres	826 acres	Cheatgrass/Historical grazing practices	3707 acres	826 acres	4120 acres	413 acres
Blue Haven	5832 acres	541 acres	Cheatgrass/Historical grazing practices	5832 acres	541 acres	6103 acres	270 acres
Kiaser/Citadel	5101 acres	0 acres	n/a	5101 acres	0 acres	5101 acres	0 acres
Indian Valley	1715 acres	398 acres	Cheatgrass/Historical grazing practices	1715 acres	398 acres	1914 acres	199 acres
Buck Pasture	1591 acres	64 acres	Cheatgrass/Historical grazing practices	1591 acres	64 acres	1623 acres	32 acres
Hay B	89 acres	0 acres	n/a	89 acres	0 acres	89 acres	0 acres
	9.9% of Total			9.9% of Total		4.9% of Total	
#5-Water Quality							
Pinto Gulch	1.5 mile	0	n/a	1.5 mile	0	1.5 mile	0
Ted's Gulch	0	0	n/a	0	0	0	0
Twin Wash	0.2 mile	0	n/a	0.2 mile	0	0.2 mile	0
Blue Haven	0.3 mile	0	n/a	0.3 mile	0	0.3 mile	0
Kiaser/Citadel	0	0	n/a	0	0	0	0
Indian Valley	0	0	n/a	0	0	0	0
Buck Pasture	0	0	n/a	0	0	0	0
Hay B	0	0	n/a	0	0	0	0
	0% of Total			0% of Total		0% of Total	

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The entire White River RA has been designated as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed grazing permit renewal is not located within a 10 mile radius of any special designated air-sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of

inhalable particulate matter, specifically particles ten microns or less in diameter associated with fugitive dust. No localized air quality monitoring data is available for the Keystone allotment. However, it is apparent that current air quality near the proposed location is good because the Colorado Air Pollution Control Division (APCD, 2005) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado to be near 50 micrograms per cubic meter ($\mu g/m^3$). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

Environmental Consequences of the Proposed Action: With implementation of the proposed action, the BLM will accurately document the number of active AUMs at all times throughout the allotment. With accurate documentation of use, the BLM will be able to collect and analyze baseline data assessing the impacts of cattle use by pasture and be able to make appropriate changes to the grazing schedule if necessary. Drought conditions combined with the impacts of livestock use may reduce ground cover increasing the potential for fugitive dust production. However, with the proposed conditions of use no impacts to air quality are anticipated.

Environmental Consequences of the Continuation of Current Management Alternative: Under the current management alternative the number of active AUMs is nearly the same as with the proposed action. However, with continuation of the current management alternative the BLM has no formal documentation of pasture rotation and use. Viable documentation of the number of active AUMs in all pastures at any given time is an essential variable necessary to accurately assess changes to land health conditions resulting from livestock use. The same environmental consequences may occur with continuation of the current management alternative but it will be much more difficult to accurately determine specific causes.

Environmental Consequences of the No Action Alternative: No livestock grazing would be permitted. Drought conditions may persist and similar environmental consequences impacting air quality would be result.

Mitigation: Allow pastures to receive appropriate rest from livestock grazing as outlined in the proposed action.

CULTURAL RESOURCES

Affected Environment: The 1998 BLM/Colorado State Historic Preservation Office (SHPO) Protocol agreement requires the BLM to identify all historic properties, prehistoric sites and sacred sites on all lands within Colorado that are within the area of potential effect (APE) of a BLM undertaking. A cultural resource assessment was completed for this allotment following the procedures outlined in IM-WO-99-039, IM-CO-99-007 and IM-CO-99-019. Copies of the cultural resource assessment are available in the White River Field Office archaeology files and the summary report is attached to the range allotment case file. Class III cultural resource inventories have been conducted within the allotment. National Register or otherwise eligible cultural properties are known to be situated in this allotment. There are no known historic properties considered to be potentially 'at risk' from damage due to livestock grazing allotment operations. Subsequent cultural resource inventories may be conducted in areas where livestock concentrations coincide with high potential for discovering vulnerable sites.

Environmental Consequences of the Proposed Action: Direct impacts that may occur where livestock concentrate include trampling, chiseling and churning of site soils, cultural features and artifacts, artifact breakage and impacts from standing, leaning and rubbing against above ground features and rock art. Indirect impacts may include soil erosion, gullying and increased potential for unlawful collection and vandalism. In areas where cultural site presence coincides with areas of livestock concentration, continued grazing may contribute to substantial ground disturbance and cause cumulative, long term, irreversible adverse effects to sites. Alteration of grazing patterns by rotating pastures should have the effect of decreasing any potential damage to existing cultural resources by decreasing the time frame for impacts on any given site.

Environmental Consequences of the Continuation of Current Management Alternative: Direct impacts that may occur where livestock concentrate include trampling, chiseling and churning of site soils, cultural features and artifacts, artifact breakage and impacts from standing, leaning and rubbing against above ground features and rock art. Indirect impacts may include soil erosion, gullying and increased potential for unlawful collection and vandalism. In areas where cultural site presence coincides with areas of livestock concentration, continued grazing may contribute to substantial ground disturbance and cause cumulative, long term, irreversible adverse effects to sites. Alteration of grazing patterns by rotating pastures should have the effect of decreasing any potential damage to existing cultural resources by decreasing the time frame for impacts on any given site.

Environmental Consequences of the No Grazing Alternative: Under this alternative, the grazing permit would not be renewed. This alternative would result in no impacts to cultural resource sites.

Mitigation: Appropriate mitigation measures may be identified in consultation with Colorado SHPO within the ten-year period of this permit. It is recommended that a renewal be issued for this permit subject to the allotment specific stipulations contained in the information forms.

If historic or archaeological materials are uncovered by the permittee, the permittee shall immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the BLM.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Noxious weeds known to occur within this allotment include perennial pepperweed (*Lepidium latifolium*), houndstongue (*Cynoglossum officinale*), bull thistle (*Cirsium vulgare)*, Canada thistle *(Cirsium arvense)*, and musk thistle *(Carduus nutans)*. Infestations of perennial pepperweed occur along the length of Deep Channel which is almost entirely privately owned but also includes close to a mile of channel on public land. This infestation has been treated in the past through cooperative efforts by the land owner, Rio Blanco County, and the BLM. Future control efforts are currently being planned. Through an on-going active weed control program, the permittee has effectively controlled and continues to control the other noxious weeds.

Cheatgrass (*Bromus tectorum*), an invasive non-native species occurs on a variety of ecological sites throughout the grazing allotment and surrounding areas. Generally its distribution is a consequence of historic over-grazing and disturbances associated with roads, wildfires, vegetation treatments and energy development sites that were not adequately re-vegetated with desirable forage species. Approximately 135 acres of rolling loam ecological site on BLM lands within the Pinto Gulch pasture and approximately 330 acres of rolling loam and pinyon/juniper ecological sites in the Twin Wash pasture have burned within the last ten years. Neither of these areas were re-seeded or rested after the fires. While native perennial grasses do occur throughout these areas, there is also a strong presence of cheatgrass. Early-seral rangelands, where cheatgrass is the dominant component of the plant composition, are essentially frozen in time. Intensive management in-put such as fire or herbicide treatment to remove cheatgrass followed by seeding of adapted perennial grasses to preempt the return of cheatgrass would be required in order for these sites to progress to a point of meeting the standards for public land health. Without intensive treatment these sites will remain unchanged and will likely continue to not meet standards under any of the grazing alternatives (proposed action, continuation of current management, or no grazing).

Environmental Consequences of the Proposed Action: Under the proposed action livestock rotate through the pastures of this allotment in the same order each year. Every pasture has multiple water sources resulting in favorable distribution and utilization rates. The rate and extent of noxious weed invasion of rangelands at all seral staged is greatly reduced in areas with a vigorous, competitive component of perennial grasses and forbs. Permitted grazing use in the spring pastures is below the calculated carrying capacity and cattle are well distributed. Under this plan, utilization levels in the spring-use pastures are generally light to moderate so key forage plants are not heavily grazed during the critical growing season and have part of the growing season after livestock are removed for re-growth and seed production. While permitted closer to calculated grazing capacity, use on the remaining pastures occurs after the critical growth season or even during the winter months when plants are dormant. Key forage species in these areas have maximum growth, regeneration and reproduction opportunity and will be more resistant to invasion by noxious weed species. The location and distribution of perennial pepperweed in the Deep Channel riparian zone is not a result of current or recent past grazing use but is a reflection of the aggressive and competitive nature of this plant species.

Environmental Consequences of the Continuation of Current Management Alternative: Under continuation of current management the grazing permittee has a general grazing schedule that he applies, however there is no actual grazing schedule or rotation through pastures identified. Impacts resulting from adoption of this alternative could be similar to those described for the proposed action; however, potentially vulnerable ecological sites could be less resistant to invasion and proliferation of noxious weeds if utilization levels were not closely monitored and livestock moved accordingly. Detection and eradication of noxious weed infestations by the grazing permittee would be essentially the same as that of the proposed action.

Environmental Consequences of the No Grazing Alternative: The impact of adopting this alternative would generally be similar to that of the proposed action with respect to the occurrence and proliferation of noxious weeds. Key forage species would not be grazed by livestock and would have optimal regeneration and reproduction opportunity; however, with no livestock grazing the permittee would no longer have a commitment to aggressive management

of noxious weeds on public lands. This stewardship is one of the primary factors why there are minimal noxious weed infestations on the Keystone allotment.

Mitigation: Managed grazing and aggressive rehabilitation and re-vegetation efforts (including aerial and drill seeding with adapted species immediately following wildfire events) following disturbances such as wildfire will be applied to limit the spread and establishment of cheatgrass. This same aggressive management will apply to re-vegetation of soil disturbances.

MIGRATORY BIRDS

Affected Environment: This extensive permit area spans an array of elevations and vegetation communities that support a wide variety of migratory birds during the nesting season (early May through mid July). Public lands within the two northern pastures (Buck and Kaiser/Citadel) are dominated by steep, rugged slopes comprised of deciduous shrub (Gambel oak, serviceberry), scattered Douglas fir, and pinyon-juniper woodlands (~ 5200 ac). The valley bottoms in these pastures are predominately basin big sagebrush with a heavy understory component of invasive, annuals (e.g., cheatgrass, mustard) particularly along the lower quarter to third, then shifting to native, perennial grasses at the upper portions. Public lands within the Blue Haven pasture are represented by juniper dominated woodlands (~ 3200 ac), and Wyoming big sagebrush/grass shrublands (~2800 ac). The higher elevations of Indian Valley, Twin and Ted's pastures are comprised predominately of mountain shrub species (Gamble oak, serviceberry, mountain mahogany) and pinyon-juniper woodlands. The valley bottoms and flats are dominated by both basin and Wyoming big sagebrush with an herbaceous understory of native, perennial grasses and in several locations, a significant cheatgrass component. The upper elevations of the Pinto Gulch pasture are dominated by pinyon-juniper woodlands (~1350 ac), with Wyoming big sagebrush and shrublands occupying the flats and valley bottoms. Birds of higher conservation interest (i.e., Partners in Flight program) associated with these habitats include: Virginia's warbler, green-tailed towhee (mountain shrub habitats), juniper titmouse and black-throated gray warbler (pinyon-juniper woodlands) and Brewer's sparrow (sagebrush habitats). All are abundant and widespread on these ranges.

Environmental Consequences of the Proposed Action: Proposed grazing periods (mid-August through February) within the Kaiser Citadel, Buck and Indian Valley pastures would not coincide with, and would have no potential to directly influence, migratory bird nesting activities. Livestock removal by late February allows for essentially unaffected development of herbaceous growth prior to and during the nesting season. Proposed use of the Blue Haven pasture would coincide with the latter portions of the breeding season (early – mid-July), however, progressive declines in ground cover, although rapid, would occur after most broods have fledged and would be expected to have little effect on nest or fledging success.

Livestock use within the Twin, Ted's and Pinto pastures is largely coincident with the breeding season and while may potentially result in minor depressions in breeding bird densities (mainly confined to the valley bottoms), is not expected to affect distribution or viability of breeding bird populations. Cattle grazing practices are typically dispersed and low intensity and, where coincident with nesting, only incidental disruption of nests in ground or low shrub situations would be expected. Reductions in effective ground cover may indirectly affect nesting outcomes by increasing the susceptibility of incubating or brooding hens and their clutches to predation or

extremes in temperature or precipitation. This impact would be most pronounced for ground nesting species associated with open shrubland and grassland habitats. Species that are more closely associated with sage-steppe shrub canopies, mountain shrub habitats and pinyon-juniper woodlands – which make up the majority of habitat within these pastures - are less apt to be influenced by reductions in herbaceous ground cover. Field inspections conducted in April 2006 indicate that within most of the lower elevations, there is sufficient movement of livestock during the growing season to avoid community degradation.

Environmental Consequences of the Continuation of Current Management Alternative: Continuation of the current management alternative would allow the permittee to maintain an open, undocumented grazing schedule. Failure to document livestock use precludes any legitimate monitoring and assessment of land health conditions and subsequently impedes determining what effects livestock use has on non-game species.

Failure to designate a season of use and define livestock numbers may increase the potential for over-utilization of certain pastures. This could substantially reduce the availability and variety of nesting and forage or forage substrate for migratory birds particularly during the breeding season and may be expected to reduce the nutritional status of nestlings or fledglings

While consequences of the current management practice may be similar to that of the proposed action, it would be impossible to determine cause and effect without proper documentation. As it stands, BLM must rely on the decisions of the permittee whose objectives may differ from those of the BLM.

Environmental Consequences of the No Action Alternative: Removal of livestock from the allotment would substantially reduce the removal of herbaceous ground cover across the allotment; influencing breeding bird activity most where past use had modified herbaceous ground cover that is used as nest substrate or provides a direct or indirect source of forage. Substantive gains in breeding bird nest density and reproductive performance would be most prevalent in the valley bottoms of those pastures – Twin, Ted's and Pinto – where livestock use is synchronous with the migratory bird nesting season. Livestock removal would be expected to have little effect on breeding bird abundance or reproductive/recruitment success in the permit area's woodlands and mountain shrub types. Dense vegetation and rugged terrain limits livestock use of these habitats. Birds associated with these higher elevation woodlands do not tend to respond positively to relatively minor increases in herbaceous expression.

Mitigation: None

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: There are no threatened or endangered animal species that are known to inhabit or derive important use within the Keystone allotment. Greater sage-grouse, a BLM-sensitive species occur within the allotment. Former or current greater sage-grouse distribution involves three of the allotment's pastures: Blue Haven, Indian Valley, and Pinto Gulch. Sagebrush communities that offer habitat suitable for seasonal grouse use is confined geographically to Indian Valley, Open and Rimrock Gulch, and lower Deep Channel Creek.

Much of the sagebrush habitats potentially suited to sage-grouse use (e.g., Indian Valley and Rimrock Gulch) have been subjected to extensive wildfire over the past 5 years. Canopy redevelopment on these more xeric Wyoming big sagebrush stands is often prolonged, and many decades will likely be required before fire-affected habitats gain functional utility for grouse. Over the past decade, evidence of winter sage-grouse use in Indian Valley has been scanty or lacking with very limited and localized points of notable use.

These lower elevation sagebrush stands typically possess poorly developed herbaceous understories where introduced annuals such as cheatgrass and bur buttercup comprise substantial ground cover fractions. The xeric nature of this allotment's sagebrush stands is often expressed by a substantial greasewood component. These conditions, most prevalent along the Deep Channel terraces and larger drainage bottoms, are thought to be a product of historic grazing use and heavy clay soils. The fact that current riparian and channel vegetation generally displays appropriate composition and cover indicates that these terraces are not subjected to grazing practices wholly incompatible with the maintenance of desirable perennial bunchgrass cover. Although a lesser component, western wheatgrass maintains a presence in the major bottomland communities. Adjacent ridgeline sagebrush communities tend to possess appropriate native bunchgrass composition.

The nearest known lek lies about 2 miles northwest of the allotment's northwest corner. Across sage-grouse range and on average, about 65% of sage-grouse nesting activity occurs within about 3 miles of a lek; if uniformly distributed, an area that would encompass the northwest corner of the Blue Haven pasture. However, due to their xeric nature, their depauperate herbaceous cover conditions, and lack of easily accessible mesic brood-rearing habitats (i.e., Deep Channel, although intermittent, is deeply incised with near vertical walls), it is unlikely that these sagebrush stands support significant nesting or brood rearing functions.

Over the past 20 years, BLM has received reports of large flocks of sage-grouse (e.g., 500 birds), particularly in Open Gulch and the benches and basins adjoining lower Deep Channel Creek. This conforms to Colorado Division of Wildlife's NDIS mapping which categorizes these habitats as winter range. Although not especially abundant, recent BLM site visits confirm evidence of scattered winter use near the confluence of Deep Channel and Crooked Wash. It is likely that these birds originate from and fulfill reproductive activities in the upper Crooked Wash and Sagebrush Draw country to the north (Little Snake Resource Area). Presently, and for the foreseeable future, it is likely that winter use functions are the predominant value derived by sage-grouse from this allotment's sagebrush communities. The availability of big sagebrush (e.g., conformation and distribution) as the sole winter forage source for sage-grouse is the preeminent winter habitat consideration.

Environmental Consequences of the Proposed Action: Although unlikely that the three pastures encompassed by overall sage-grouse range presently support significant nesting or brood use, land use patterns and historic/proposed grazing use likely has influence on this potential. Proposed grazing use would have no effective influence on the utility or suitability of what is currently predominant winter sage-grouse use.

The current and proposed grazing regimen for the Pinto Gulch pasture represents season-long livestock use (i.e., persistent use through the growing season, 1 March through 1 July). Depending on overall utilization levels, this form of use is generally not conducive to the

development or maintenance of herbaceous understory characters (as forage, insect substrate, and cover) that favor strong nest success (early April through mid July) or chick recruitment. Particularly because those sagebrush habitats best suited for sage-grouse use in the pasture are situated along a reliable water source (i.e., terraces along Deep Channel Creek), it is likely that these habitats are subjected to heavy grazing use with little opportunity for development or retention of effective herbaceous cover. Potential nest and brood habitat is limited to about 300 acres in this pasture, half of which are BLM-administered in 2 parcels that are widely separated by intervening private holdings.

Current and proposed grazing treatment for the Indian Valley pasture involves late fall and winter use (October through February). Spring and early summer use would be relegated to big game (primarily elk). This schedule would generally allow for full herbaceous ground cover development during nest and brood periods, but dormant season use would likely remove most residual cover that is often credited with reducing nest predation during the early portion of the nesting season. At the present time, this utility of this pasture for sage-grouse use (about 560 BLM–administered acres) has been extensively influenced by fire and recovery will require many decades beyond the term of this permit renewal.

The Blue Haven pasture currently holds the largest expanse of suitable BLM-administered sage-grouse habitat (about 700 BLM-administered acres). Proposed use of the pasture is of relatively short duration (early July through mid August) and involves the latter portion of the growing season. Relative to sage-grouse breeding chronology, this period would coincide with the end of the nesting season and the early brood period when chicks are most vulnerable to predation (through mid-August). Grazing deferment would allow nearly complete ground cover development during the nesting period, and progressive reduction in ground cover would likely not exceed light use levels ($\geq$40%) until most chicks had gained at least limited flight capability (by 3rd week of July). Late season use may allow for modest regrowth opportunities in the fall, but it is likely that heavy elk use reduces most residual ground cover to ineffective levels.

In summary, current and proposed grazing regimens across the Blue Haven and Indian Valley pastures, which encompass about 90% of BLM-administered sagebrush sites suitable or potentially suitable for sage-grouse in the allotment, allow for maintenance and likely continued improvement in herbaceous understory composition and would generally provide for adequate development of effective nest cover (both pastures) and brood cover (1st 2-3 weeks of brood season in Blue Haven). Grazing use intensity by big game and livestock in both pastures during the late growing and dormant seasons would probably not allow retention of sufficient residual to complement early-season nesting cover the following year. Proposed and current grazing use of the Pinto Gulch pasture, which encompasses about 10% (150 acres) of the allotment's potential sage-grouse habitat, are not consistent with practices that accommodate successful nesting or brooding of sage-grouse. Efforts to restructure grazing use for these small habitat in-holdings within the larger pasture (6,600 acres) are not considered practical.

Environmental Consequences of the Continuation of Current Management Alternative: Continuation of the current management alternative is likely to be similar to that of the proposed action with the exception that the permittee would continue to maintain an open, undocumented grazing schedule. Non-documentation of livestock use precludes any legitimate monitoring and assessment of land health conditions and subsequently impedes determining what effects livestock use has on listed species and those habitats of importance.

Failure to designate a season of use and define livestock numbers may increase the potential for over-utilization of certain pastures. While consequences of the current management practice may be similar to that of the proposed, it would be impossible to determine cause and effect without proper documentation. As it stands, BLM must rely on the decisions of the permittee whose objectives may differ from those of the BLM.

Environmental Consequences of the No Action Alternative: While livestock removal would substantially reduce the removal of herbaceous ground cover across the allotment as a whole, it is unlikely there would be any significant changes to those lower elevation sagebrush stands which historically supported nesting and brood-rearing functions. Poorly developed herbaceous understories, even in the absence of livestock grazing, would not shift to a perennial community within the span of this permit.

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species: This allotment generally meets the standard for greater sage-grouse in the context of what is now predominantly winter use. Although a portion of this range has recently burned, these events are considered a successional process that is necessary for the long term sustainability of sage-steppe habitats. It is likely that these habitats served nest and brood-rearing functions long in the past, but historic grazing practices have strongly modified understory character, approximately 60% of which are now dominated by introduced annuals and are generally inappropriate for sage grouse nesting and brood-rearing functions. The current and proposed grazing strategies on about 90% of BLM-administered sagebrush habitats suitable for sage-grouse in the allotment should not interfere with long term improvements in the vigor, frequency, and composition of perennial understory components, but this process will involve many decades beyond the term of this permit. Grazing use on these two pastures would allow acceptable levels of ground cover development during the nest and early brood periods, but in the case of Blue Haven, would probably involve rapid reduction of ground cover at the end of the early brood period and neither pasture would likely retain sufficient residual material to complement early nest success in subsequent years.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands.

Environmental Consequences of the Proposed Action: No hazardous wastes would be generated. Small quantities of solid could be potentially be generated by day to day operations.

Environmental Consequences of the Continuation of Current Management Alternative: No hazardous wastes would be generated. Small quantities of solid waste could be potentially be generated by day to day operations.

Environmental Consequences of the No Grazing Alternative: None

Mitigation: The permittee shall be required to collect and properly dispose of any solid wastes generated by the proposed action.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: The proposed permit renewal will be situated in the Deep Channel Creek, Colorow Gulch, and Deception Creek watersheds. Deception Creek is a tributary to the Yampa River and is situated in stream segment 3c of the Yampa River Basin. Deep Channel Creek is a tributary to the White River and is located in stream segment 9a of the White River Basin. Colorow Gulch is also a tributary to the White River but is positioned in stream segment 13a of the White River Basin.

A review of the "Status of Water Quality in Colorado – 2004" (CDPHE, 2004b), Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE, 2004a), Regulation No. 93, 2004 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs (CDPHE, 2004c), Regulation No. 94, Colorado's Monitoring and Evaluation List (CDPHE, 2004d), and the White River Resource Area RMP was done to see if any water quality concerns have been identified. The State has classified both stream segments 9a and 13a of the White River Basin as "Use Protected". The antidegredation review requirements in the Antidegredation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. Stream segment 3c of the Yampa River Basin is not listed as "Use Protected". An intermediate level of water quality protection applies to waters that have not been designated as outstanding waters or use-protected. For these waters existing water quality shall be maintained and protected.

Stream segment 3c has been designated by the state as beneficial for the following uses: Warm Aquatic Life 1, Recreation 1b, water supply and Agriculture. Minimum standards for four parameters have been listed, these parameters are: dissolved oxygen = 5.0 mg/l, pH = 6.5 - 9.0, Fecal Coliform = 325/100 ml, and 205/100 ml E. coli.

Stream segment 9a has been designated by the state as beneficial for the following uses: Cold Aquatic Life 2, Recreation 2, water supply and Agriculture. Minimum standards for four parameters have been listed, these parameters are: dissolved oxygen = 6.0 mg/l, pH = 6.5 - 9.0, Fecal Coliform = 2000/100 ml, and 630/100 ml E. coli. Stream segment 9a retained its Recreation Class 2 designation after sufficient evidence was received that a Recreation Class 1a use was unattainable.

Stream segment 13a has been designated by the state as beneficial for the following uses: Warm Aquatic Life 2, Recreation 2, and Agriculture. Minimum standards for four parameters have been listed, these parameters are: dissolved oxygen = 5.0 mg/l, pH = 6.5 - 9.0, Fecal Coliform = 2000/100 ml, and 630/100 ml E. coli. Stream segment 13a retained its Recreation Class 2 designation after sufficient evidence was received that a Recreation Class 1a use was unattainable.

Environmental Consequences of the Proposed Action: With implementation of the proposed action, the BLM will accurately document the number of active AUMs at all times by pasture throughout the allotment. With accurate documentation of use, the BLM will be able to

collect and analyze baseline data assessing the impacts of cattle use by pasture and be able to make appropriate changes to the grazing schedule as necessary. Environmental consequences resulting from livestock/wildlife grazing combined with drought conditions may contribute to reductions in litter accumulation and vegetal cover. As a result, soils may become increasingly vulnerable to erosional processes elevating sediment production to lower reaches of the affected watersheds. In addition, livestock/wildlife use in riparian areas may deteriorate the health of riparian communities. Deteriorating riparian communities will limit the ability of the system to anchor stream banks, and maintain functional channel morphologic conditions where sediment supply is in balance with flow characteristics.

Environmental Consequences of the Continuation of Current Management Alternative: Under the current management alternative the number of active AUMs is nearly the same as with the proposed action. However, with continuation of the current management alternative the BLM has no formal documentation of pasture rotation and use. Viable documentation of the number of active AUMs in all pastures at any given time is an essential variable necessary to accurately assess changes to land health conditions resulting from livestock use. The same environmental consequences may occur with continuation of the current management alternative but it will be much more difficult to accurately determine specific causes.

Environmental Consequences of the No Action Alternative: None

Mitigation: Continue monitoring of plant community condition to help identify if additional actions are needed to comply with the *Clean Water Act*. In addition, monitoring of stream channel morphology (Rosgen survey data) will be essential to evaluate the impacts of livestock/wildlife in the allotment.

Finding on the Public Land Health Standard for water quality: Water quality within the area of the proposed action currently meets water quality standards established by the state. However, many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. By following suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: Throughout the Keystone allotment there are several short sections of riparian systems primarily along and associated with Deep Channel that occur on BLM administered lands. Pinto Gulch and Ted's Gulch each have short tributary systems that feed into Deep Channel. All of these stream sections are low gradient systems and are generally well vegetated and dominated by vigorous herbaceous riparian vegetation including various rushes *(Juncus spp.),* sedges *(Carex spp.),* bulrushes *(Scirpus spp.),* riparian associated forbs and early seral riparian species including redtop *(Agrostis spp.)*. Some scattered tamarisk *(Tamarix spp.)* can be found along Deep Channel as well. The riparian systems are confined within historically down cut meandering channels with channel bed materials of mostly silty clay though a short section of the Pinto Gulch riparian system has a steep bedrock channel. Riparian Proper Functioning Condition assessments were conducted on Deep Channel in 1997 and again in 2005. A ¼ mile section of Deep Channel was rated as proper functioning though given the proximity of perennial pepperweed it is at risk of infestation. The remaining one and ½ mile of

Deep Channel was rated as functional but at risk of degradation primarily due to the presence of perennial pepperweed and lack of vertical stability due to a small head-cut near the western boundary of the allotment. Approximately ½ mile of Pinto Gulch and 1/3 mile of Ted's Gulch were initially assessed in 2005. Though well vegetated with desirable riparian species both areas were rated as functional but at risk, again primarily due to noxious weeds and potential vertical instability. Livestock use along these systems occurs generally from March through June.

Environmental Consequences of the Proposed Action: Under the proposed action livestock grazing could potentially occur in the riparian systems from early March through June. The remainder of the growing season would allow riparian plants opportunity for adequate re-growth and biomass accumulation for dissipating high-flow energy and capturing sediment, bank building and prolonged water release. Though most channels are deep with steep banks, livestock do access these systems. Use tends to be distributed evenly throughout the systems with few points of concentrated impact. Proposed livestock use will slow the improvement process but under this proposal it should allow maintenance or improvement of riparian systems within the Keystone allotment.

Environmental Consequences of the Continuation of Current Management Alternative: Continuation of the current grazing schedule would allow maximum flexibility in terms timing of livestock grazing in riparian areas. Under this open grazing schedule livestock grazing could occur anywhere in the allotment at any time of year though it is expected that the permittee would continue to operate on a schedule similar to the proposed action. Without a designated season of use if riparian areas were grazed in the fall opportunity for re-growth would be limited potentially resulting in increased erosion and excessive sediment loads with spring run-off.

Environmental Consequences of the No Action Alternative: With no livestock grazing riparian vegetation would not be impacted by livestock and it is likely that the condition of riparian systems in the Keystone allotment would progress to their full potential and function properly. However there are noxious weeds in and near these systems and without permittee participation spread of noxious weeds, especially perennial pepperweed is likely.

Mitigation: Stocking rates and grazing in riparian systems at moderate levels allowing for adequate re-growth opportunities. A minimum stubble height of four inches should be maintained on riparian vegetation. While fencing off portions of these streams is not part of this proposal, it should be an option if future riparian conditions should warrant it. However, the proposed grazing schedule and stocking rates should result in maintenance or improvement of these riparian systems.

Finding on the Public Land Health Standard for riparian systems: Riparian systems associated with Deep Channel, Pinto Gulch, and Ted's Gulch are all generally well vegetated with a diverse and vigorous variety of riparian plants. The systems are functional but at risk of degradation primarily due to the presence of perennial pepperweed and to a lesser degree, vertical instability due to the presence of small yet generally well-vegetated head-cuts. Under the proposed action, light to moderate use permitted to occur early in the growing season is expected to allow adequate opportunity for re-growth and improvement of riparian condition over time resulting in achieving or moving toward achieving the public land health standard for riparian systems.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's, flood plains, prime and unique farmlands, Wilderness, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species the standard for public land health is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: See tables in the Rangeland Management section of this document for a breakdown of soil units and associated ecological sites of BLM, State, and private acres within the Keystone allotment. Soils analyzed in this document have been covered in either the Rio Blanco County Soil Survey or the Moffat County Soil Survey. These soil surveys delineate individual soil unit polygons and associated ecological sites.

Soils occupied with plant communities rated as mid-seral, late-seral, or PNC (Potential Natural Community) have sufficient cover of desirable plant species to produce adequate litter and ground cover to minimize runoff and provide for soil protection (refer to the Vegetation section below). These soils are meeting the Colorado Public Land Health Standard for upland soils. The pastures within the Keystone allotment have the following BLM acres achieving or moving towards achieving for Standards for Public Land Health: Pinto Gulch - 4074 (80%), Ted's Gulch - 4543 (97%), Twin Wash - 3707 (82%), Blue Haven - 5832 (92%) Kaiser/Citadel - 5101 (100%), Indian Valley - 1715 (81%), Buck - 1590 (96%). Refer to Vegetation section of this document for plant community and ecological site tables.

Soils with early-seral plant communities lack sufficient diversity and/or cover of native plant species to provide effective ground cover to prevent overland flow, runoff, and general soil degradation. These soils show evidence of erosion with pedestaling, minor expression of rills, and some active gully erosion. Erosion is most evident on alkaline and clayey slopes and clayey foothill ecological sites where soils have high clay content (Blue Haven 109 acres, Indian Valley 86 acres, Pinto Gulch 374 acres). Areas of active high erosion are typically found along major drainages (along Deep Channel, Pinto Gulch, Ted's Gulch and Twin Wash) that have down-cut in the historic past. Associated side drainages have down-cut to the level of the major drainages to obtain equilibrium. Early-seral sites have soils that are typically on toe-slopes and to a lesser degree within drainage bottoms or in the Pinto Gulch pasture, along the upland terraces above the Deep Channel Creek channel. Most of the early-seral sites are not meeting land health standards.

Environmental Consequences of the Proposed Action: Ground cover of native perennial plant species and adequate plant litter are central in the protection and stabilization of soils. Under the proposed action mid-seral and some early-seral ecological sites within summer, fall and winter pastures (Blue Haven, Kaiser/Citadel, and Indian Valley) would continue to have critical growing season rest and would also have increased surface litter accumulation, canopy cover, and ground cover due to adjustments in the grazing schedule resulting in slightly reduced grazing use. Spring and early summer pastures (Pinto Gulch, Ted's Gulch and Twin Wash) would continue to be grazed during the critical growing season at light to moderate levels. Under this plan cattle are well distributed and scheduled grazing use will continue to be below the calculated carrying capacity. Utilization levels in the spring-use pastures are moderate so key forage plants are not heavily grazed during the critical growing season and have part of the growing season after livestock are removed for re-growth and seed production.

On soils with late-seral or PNC plant communities little change from the current status is expected with regard to soil protection related to plant cover. Ecological sites already at full potential and meeting Public Land Health Standards will not be appreciably influenced by the proposal.

Without some form of intensive management disturbance such as fire or chemical treatment with follow-up drill seeding, soils with early-seral plant communities dominated by annual plants and sites dominated by old decadent stands of sagebrush lacking herbaceous understory components will continue at their current state because they have crossed a threshold. This situation is nearly irreversible regardless of the livestock management. Historical grazing practices created most of the early-seral plant communities that do not meet the public land health standards for soils. These sites are essentially frozen in time and will remain unchanged regardless of livestock management.

Environmental Consequences of the Continuation of Current Management Alternative: Under this alternative, the lack of an actual grazing schedule with defined numbers and dates of rotation through pastures, negative impacts could occur on potentially vulnerable ecological sites if utilization levels were not closely monitored and livestock moved accordingly. Mid-seral sites and to a lesser degree late-seral plant communities have potential for negative impacts to soils including downward change in species composition, diversity, desired plant species cover, and/or reduced production for many of these rangelands. PNC communities would most likely continue to meet health standards and the early-seral communities would not. Lack of documentation of actual livestock use by pasture precludes any legitimate monitoring and assessment of land health conditions, making it difficult to determine cause and effect to the soils and plant communities as related to livestock use.

Environmental Consequences of the No Grazing Alternative: Under a no grazing by livestock alternative, most areas that are currently being grazed by livestock would experience a short term increase in both perennial plant cover and soil surface litter accumulation. Mid-seral ecological sites would likely experience the greatest benefit of increased perennial plant cover. On early-seral ecological sites such as the monocultures of sagebrush or greasewood and on rangelands dominated by cheatgrass, most areas are not expected to change in perennial plant cover because they have crossed a threshold of total sagebrush and/or annual plant domination. Soils associated with PNC ecological sites would continue to meet public land health standards and experience minimal changes in plant species composition and diversity.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial: see also Wildlife, Aquatic and Wildlife, Terrestrial): Soils of early-seral plant communities generally are not meeting land health standards due to inadequate soil surface protection caused by a considerable component of non-native annual grasses, primarily cheatgrass. As noted in the vegetation section below, historic grazing practices created the situation in which most of the identified early-seral plant communities do not meet land health standards for upland soils. This situation is largely irreversible regardless of the livestock grazing management practices employed now or in the future without intensive management such as human induced disturbance, chemical treatment and subsequent seeding of desirable perennial species to preempt cheatgrass dominance in these communities. Soils of mid-seral, late-seral, and PNC communities make up the bulk of the acreage included in this allotment and currently meet land health standards. Implementation of the proposed action will enhance the ability of the rangelands to meet the public land health standards in the future.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The following table lists plant communities and the dominant plant species for the ecological sites or woodland types on the allotment as associated with the proposed action. Forb species, though important to the diversity of a community and comprising up to 25 to 30% of the composition of several of the plant communities listed, are not presented in the following table because they generally are not significant contributors to the general appearance of the community.

PLANT COMMUNITIES AND DOMINANT PLANT SPECIES BY ECOLOGICAL SITES

Ecological Site / Woodland Type	Plant Community Appearance	Predominant Plant Species in the Plant Community
Alkaline Slopes	Sagebrush/grass Shrubland	Wyoming big sagebrush, winterfat, low rabbitbrush, wheat grasses, Indian rice grass, squirreltail
Brushy Loam	Deciduous Shrub/grass Shrubland	Serviceberry, oakbrush, snowberry, mountain brome, slender wheatgrass, western wheatgrass, Letterman and Columbia needle grasses
Clayey Foothills	Grass/Open Shrub Shrubland	Western wheatgrass, mutton grass, Indian rice grass, squirreltail, June grass, Wyoming big sagebrush, black sagebrush
Clayey Saltdesert	Salt Desert Shrubland	Gardner saltbush, shadscale, mat saltbush, galleta, Salina wildrye, squirreltail, Indian rice grass
Clayey Slopes	Grassland	Salina wildrye, mutton grass, western wheatgrass, June grass, squirreltail, shadscale
Deep Clay Loam	Grass/Open Shrub Shrubland	Western wheatgrass, slender wheatgrass, mutton grass, squirreltail, June grass, Letterman and Columbia needle grasses, mountain big sagebrush
Deep Loam	Grassland	Bluebunch wheatgrass, mottongrass, needle-and-thread, western wheatgrass, slender wheatgrass, big sagebrush, serviceberry, snowberry.
Dry Exposure	Grassland	Beardless bluebunch wheatgrass, needle-and-thread, June grass, Indian rice grass, fringed sage, buckwheats
Foothill Swale	Grass/Open Shrub Shrubland	Basin wildrye, western wheatgrass, slender wheatgrass, streambank wheatgrass, Indian rice grass, Nevada bluegrass, basin big sagebrush, fourwing saltbush, rubber rabbitbrush
Loamy Saltdesert	Grass/Salt Desert Shrubland	Needle-and-thread, galleta, Sandberg bluegrass, squirreltail, Indian rice grass, Gardner saltbush, shadscale, winterfat, horsebrush
Loamy Slopes	Mix Shrub/grass Shrubland	Mountain mahogany, bitterbrush, serviceberry, mountain big sagebrush, beardless bluebunch wheatgrass, western wheatgrass, June grass, Indian rice grass

PLANT COMMUNITIES AND DOMINANT PLANT SPECIES BY ECOLOGICAL SITES

Ecological Site / Woodland Type	Plant Community Appearance	Predominant Plant Species in the Plant Community
Mountain Loam	Grass/Open Shrub Shrubland	Mountain brome, slender wheatgrass, western wheatgrass, Letterman and Columbia needle grasses, mountain big sagebrush, bitterbrush, low rabbitbrush,
Mountain Swale	Grass/Open Shrub Shrubland	Basin wildrye, slender wheatgrass, western wheatgrass, Letterman and Columbia needle grasses, sedges, rushes, mountain big sagebrush, rubber rabbitbrush, snowberry,
Rolling Loam	Sagebrush/grass Shrubland	Wyoming big sagebrush, winterfat, low rabbitbrush, horsebrush, bitterbrush, western wheat grass, Indian rice grass, squirreltail, June grass, Nevada and Sandberg bluegrass
Saltdesert Breaks	Salt Desert Shrubland	Galleta, salina wildrye, squirreltail, Indian rice grass, needle-and-thread, shadscale, winterfat
Saltdesert Overflow	Grassland	Alkali sacaton, galleta, Indian ricegrass, squirreltail, sand dropseed, fourwing saltbush, rubber rabbitbrush, greasewood.
Salt Meadow	Grassland	Inland salt grass, western wheatgrass, slender wheatgrass, fourwing saltbush, rubber rabbitbrush
Sandy Saltdesert	Grass/Salt Desert Shrubland	Needle-and-thread, Indian rice grass, sand dropseed, Sandberg bluegrass, squirreltail, galleta, shadscale, winterfat, horsebrush
Semidesert Clay Loam	Grass/Sagebrush Shrubland	Western wheatgrass, squirreltail, galleta, Salina wildrye, Indian rice grass, Wyoming big sagebrush, fourwing saltbush, shadscale
Semidesert Loam	Grass/Sagebrush Shrubland	Needle-and-thread, western wheatgrass, galleta, Sandberg bluegrass, squirreltail, Indian rice grass, sand dropseed, Wyoming big sagebrush, fourwing saltbush, winterfat
Stony Foothills	Grass/Open Shrub Shrubland	Beardless bluebunch wheatgrass, western wheatgrass, needle-and-thread, June grass, Indian rice grass, fringed sage, Wyoming big sagebrush, black sage, serviceberry, pinyon and juniper
Stoney Loam	Grass/Shrubland	Bluebunch wheatgrass, Indian ricegrass, needle grasses, motton grass, western wheatgrass, serviceberry, bitterbrush, bog sagebrush, snowberry
Pinyon/Juniper	Pinyon/Juniper Woodland	Pinyon pine, Utah juniper, mountain mahogany, bitterbrush, serviceberry, Wyoming big sagebrush, beardless bluebunch wheatgrass, western wheatgrass, June grass, Indian rice grass, mutton grass

The following table shows the seral rating used by the BLM to rate rangeland vegetation communities in comparison to the Potential Natural Plant Community (PNC) for a particular ecological site.

ECOLOGICAL SITE SIMILARITY RATINGS

Seral Rating	% Similarity to the Potential Natural Plant Community (PNC)
Potential Natural community (PNC)	76-100% composition of species in the PNC
Late-Seral	51-75% composition of species in the PNC
Mid-Seral	26-50% composition of species in the PNC
Early-Seral	0-25% composition of species in the PNC

The following tables show an estimate of the public land acreage falling within each of the seral ratings for ecological sites on the Keystone allotment. These estimates are based on professional judgment of the Rangeland Management Specialist trained in the use of the rating system. During the 2005 field season most significant ecological sites on the allotment were visited for a plant community assessment of the Colorado Public Land Health Standards. Historical grazing practices (heavy spring use, over-utilization, etc.) created the situation where some early-seral plant communities do not meet the rangeland health standards. Some early-seral sites have crossed a threshold that is nearly irreversible without some form of intensive management, such as fire or use of chemicals followed by re-seeding with desirable adapted perennial species,

regardless of livestock management.

KEYSTONE ALLOTMENT #06605

Ecological Site Similarity Ratings						
Ecological Site	**Total BLM Acres**	**PNC**	**Late-Seral**	**Mid-Seral**	**Early-Seral**	**BLM Acres Classified**
Alkaline Slopes	129	0	0	46	83	129
Brushy Loam/Brushy Loam	1272	1018	254			1272
Clayey Foothills	2796	378	566	1398	454	2796
Clayey Slopes	382	19	48	287	28	382
Clayey Slopes/Clayey Slopes	201	13	82	91	15	201
Deep Clay Loam	928	35	185	464	244	928
Deep Loam	15	15	0	0	0	15
Deep Clay Loam/Mountain Loam	47	47	0	0	0	47
Dry Exposure/Dry Exposure	250	182	52	16	0	250
Foothills Swale	408	80	92	163	73	408
Loamy Slopes	225	169	45	11	0	225
Mountain Loam/Mountain Loam	832	624	166	42	0	832
Mountain Swale	38	27	11	0	0	38
None	3886	n/a	n/a	n/a	n/a	n/a
Pinyon-Juniper woodlands	1392	n/a	n/a	n/a	n/a	n/a
PJ woodland/Rolling Loam	993	219	298	397	79	993
PJ Woodlands/Clayey Slopes	3856	0	0	0	0	0
PJ woodlands/PJ woodlands	2955	n/a	n/a	n/a	n/a	n/a
Rolling Loam	1825	134	202	985	504	1825
Rolling Loam/Clayey Foothills/Sandy Juniper	2205	352	528	882	443	2205
Rolling Loam/Deep Loam	28	14	8	6	0	28
Salt Meadow	160	9	28	80	43	160
Sandy Foothills	109	23	38	33	15	109
Stoney Foothills	4666	2366	1560	512	228	4666
Total	29598	5724	4163	5413	2209	17509
% Classifiable BLM Acres		33%	24%	31%	13%	59%

In the Keystone allotment (#06605), 88 percent of the classifiable ecological sites have plant communities within acceptable, desired thresholds (mid to PNC) as defined in the White River ROD/RMP. Vegetation production and composition of native species on these sites provide adequate cover for soil protection and forage to meet livestock demands. These sites are not presently at risk of degradation and are at low risk of invasion by non-native species. Approximately 8235 acres of Pinyon/Juniper woodland, rock outcrops and steep slopes do not fall into classifiable seral stages. On steep sites inaccessibility and lack of forage result in low impact from livestock or wildlife and accordingly these areas generally are within an acceptable land health standard status.

Early-seral deep clay loam and rolling loam ecological sites are primarily in valley bottoms, toe-slopes and/or flatter sites that have experienced higher grazing pressure historically. Some of these areas have a strong presence of cheatgrass in the plant community. Probable causative factors for the early-seral conditions are heavy early-season livestock use, lack of disbursed water sources and historic high grazing intensity. Overall, early-seral communities do not currently meet the Public Land Health Standards for species diversity, soil protection, and/or forage production due to the presence of cheatgrass.

The mid and late-seral sites are primarily on clayey slopes, stony foothill and pinyon/juniper ecological sites. Lack of fire and influence from livestock grazing is resulting in a shift in the natural plant communities. Long-term trend photos show a substantial amount of pinyon/juniper encroachment out into previously grass and sagebrush dominated communities. Currently these communities have adequate production and cover of native species and are not at risk of degradation or invasion of non-native plant species. Over time the pinyon/juniper community will continue to invade the grassy slopes and sagebrush communities and degrade these sites as the natural plant community shifts.

Environmental Consequences of the Proposed Action: The proposed action will promote grazing at sustainable utilization levels based on current calculated livestock carrying capacities for each pasture. Vegetation would have adequate opportunity for seed production, replenishment of root reserves, biomass accumulation, and plant propagation. Vegetative residue would be adequate to allow soils to maintain their water holding capability (primarily based on surface litter) and maintain seedling survival necessary to sustain a healthy, reproducing plant community.

The proposed grazing system should have a neutral impact on PNC and late-seral ecological sites in all pastures, as they are already meeting the public land health standards. The greatest benefit of the proposed action will be improved documentation of actual livestock use in each pasture, which will allow for improved future decision making based on utilization studies and long-term trend monitoring. Continued grazing at the proposed level should allow adequate perennial plant cover and litter accumulation on early-seral sites that have not crossed a threshold to annual plant domination. In mid to late-seral communities where pinyon/juniper encroachment is occurring there will not be significant improvement without some form of influencing action such as fire. Early-seral sites that have crossed a threshold to cheatgrass domination and areas with decadent sagebrush stands lacking adequate herbaceous understory would probably continue at their current state unless some influencing agent such as fire occurred.

Environmental Consequences of the Continuation of Current Management Alternative: Under the continuation of current management alternative, the grazing schedule allows complete flexibility and could result in livestock grazing any part of the allotment at any time of year though it is likely that grazing would occur in a schedule similar to the proposed action. Under this open schedule there is potential for key forage species to be over-utilized unless utilization levels were carefully monitored and livestock moved accordingly. There is potential for degradation of PNC, late and mid-seral ecological sites that are currently meeting public land health standards due to over-utilization. There is potential for key forage species to be over-utilized and have inadequate opportunity to meet their physiological needs to maintain themselves or to produce enough seed for reproduction. Currently healthy ecological sites could be degraded to a point where they no longer meet public land health standards. The potential is high for early-seral sites with cheatgrass present to cross a relatively permanent threshold to cheatgrass domination if key forage species are repeatedly stressed by over-utilization.

Environmental Consequences of the No Grazing Alternative: Under a no grazing by livestock alternative, most areas currently being grazed by livestock would experience a short-term increase in both perennial plant cover and soil surface litter accumulation. Mid-seral ecological sites would likely experience the greatest benefit of increased perennial plant cover. On early-seral ecological sites (primarily monocultures of sagebrush or rangelands dominated by

cheatgrass) that have crossed a threshold a notable change in perennial plant cover would not be expected. PNC ecological sites would continue to meet public land health standards and experience minimal changes in plant species composition and diversity.

Mitigation: Continue long-term trend monitoring, rangeland health evaluations and make necessary adjustments to livestock management practices to meet resource objectives.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial)*:* Most areas not meeting the Standards are the early-seral communities. This is primarily due to considerable composition of the annual invasive cheatgrass combined with inadequate presence of desirable forage species. Most of the other (mid to PNC) seral communities are currently meeting public land health standards and make up the bulk of acres in the allotment. Desirable native forage species are present in the majority of the early-seral areas and most of these areas do not appear to have crossed a threshold to annual cheatgrass domination. Under reasonable grazing conditions these sites could be expected to show improvement in plant composition and cover. Except in the early-seral plant communities that have crossed a threshold, implementation of the proposed action should enhance the ability of the rangelands to meet the public land health standards in the future.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: Aquatic habitats potentially influenced by livestock within the permit area are associated with Deep Channel and those tributary systems of Pinto and Ted's Gulch that feed into Deep Channel. Approximately 2 non-continuous miles (13%) of aquatic systems within the allotment occur on public lands. These aquatic systems are generally low gradient and characterized by vigorous herbaceous riparian vegetation including rushes, sedges, bulrushes, and riparian associated forbs. Squirreltail and salt grass – species not generally palatable to livestock - are common along the adjacent terraces. Much of the channel is deeply incised with near vertical walls. Perennial pepperweed has established itself along much of the reaches of Deep Channel and its tributary systems.

Nearly one mile of the Deep Channel drainage was surveyed by BLM biologists in mid-April. No amphibian species were observed although it is extremely probable that these system support populations of both chorus and leopard frogs. Due to intermittent flows, these systems are incapable of supporting higher order aquatic habitats that involve fisheries.

Environmental Consequences of the Proposed Action: Proposed livestock use would potentially involve aquatic habitats on public lands between early-March through June. Although this schedule may prolong channel recovery, particularly in those reaches categorized as functional but at risk, removal of livestock by late June would allow for adequate residual and/or regrowth opportunity of riparian obligates. Surveys conducted in mid-April along the Deep Channel drainage indicated no sign of severe or prolonged utilization as channel vegetation generally displayed appropriate composition and cover.

Noxious weeds would continue to threaten the integrity of all vegetation resources as forage and cover resources, but ongoing efforts by the permittee and BLM would be expected to remain effective in stalling the spread and influence of these weeds on native communities.

Environmental Consequences of the Continuation of Current Management Alternative: Continuation of the current management alternative is likely to be similar to that of the proposed action with the exception that the permittee would continue to maintain an open, undocumented grazing schedule. Failure to document livestock use precludes any legitimate monitoring and assessment of land health conditions and subsequently impedes determining what effects livestock use has on aquatic wildlife and associated habitats.

Failure to designate a season of use and define livestock numbers may increase the potential for over-utilization of certain pastures. This could substantially alter the composition of channel vegetation. While consequences of the current management practice may be similar to that of the proposed, it would be impossible to determine cause and effect without proper documentation. As it stands, BLM must rely on the decisions of the permittee whose objectives may differ from those of the BLM.

Environmental Consequences of the No Action Alternative: Although riparian and wetland vegetation would certainly express itself more abundantly within the channels in the absence of livestock, it is unlikely there would be any significant changes in abundance of aquatic wildlife and/or habitat. Slight increases in chorus and leopard frog densities and improved channel conditions for macroinvertebrates would be expected however channel characteristics (i.e., intermittent flows) would never be capable of supporting higher order aquatic habitats that involve fisheries.

Permit denial would provide no incentive to treat noxious weed infestations by livestock permittee it is likely that noxious weeds would proliferate and rapidly dominate vegetation communities along these channels. Weed dominance would negate any progress in vegetation-derived channel stability and would lead to progressive deterioration of channel conditions for macroinvertebrate production.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): The public land health standard for aquatic wildlife communities is currently being met. Under the proposed action, the standard would continue to be met since there would be no substantive change in the use of livestock waters and the aquatic conditions which they provide. It is uncertain what influence no grazing would have on these features, but it would not detract from continued meeting of the standard through the term of the permit.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: This expansive permit area spans ranges used year-round by deer and elk, largely during fall and early winter (September – December) as big game transition between summer and winter range. Although big game and cattle use is largely synchronous

particularly within the Kaiser/Citadel, Buck and Indian Valley pastures, there are no widespread or severe instances of livestock–big game forage conflicts. The availability and variety of favored upland forages, with the exception of the terraces along Deep Channel, appear adequate. Allotment inspections conducted in June 2005, and again in April 2006 by BLM biologists show no obvious instances of prolonged animal concentration or forage conditions that indicated excessive levels of seasonal use. The upland terraces above Deep Channel exhibit extremely degraded conditions, with an herbaceous understory dominated by introduced annuals such as cheatgrass and bur buttercup and a substantial greasewood component. This is likely more a factor of historical grazing influences rather than current grazing practices as the adjacent riparian and channel vegetation generally displays appropriate composition and cover.

Breeding raptor use of project area is represented largely by red-tailed hawk and accipitrine species. Mature pinyon-juniper woodlands throughout the project area may support a small number of breeding sharp-shinned hawk, Cooper's hawk and long-eared owl.

Nongame mammals and birds using this area are typical and widely distributed in extensive like habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

Environmental Consequences of the Proposed Action: The proposed grazing schedule is not expected to differ markedly from current management practices. Total AUM's would increase by only 2% and would likely not result in any significant reductions in composition or forage availability for big game. Based on ground cover conditions, the timing and intensity of livestock use in conjunction with ongoing big game use would have no adverse influence on the composition, vigor, or regeneration of herbaceous vegetation.

Livestock use of heavy bunchgrass residual in the late fall/early winter (e.g., Blue Haven, Kaiser/Citadel, Buck, Indian Valley and Pinto pastures) likely operates to increase the availability of emerging grass growth as a nutritious forage source for big game in the spring. Bunchgrass preconditioning effects attributable to cattle would be situated where spring use by deer is concentrated as well. Current and proposed livestock use has no apparent influence on the availability or production of woody forage for big game winter use.

Collective use by livestock and big game reduces residual cover through the fall and winter months, but at light to moderate use levels (~ 30-40% utilization), sufficient residual and basal cover should remain widely available on BLM-administered lands during the winter and into the spring to provide adequate ground cover and/or forage for non-hibernating small mammals and early nesting attempts by ground-nesting birds.

Noxious weed would continue to threaten the integrity of all vegetation resources as forage and cover resources, but ongoing efforts by the permittee and BLM would be expected to remain effective in stalling the spread and influence of these weeds on native communities.

Environmental Consequences of the Continuation of Current Management Alternative: With the exception of documentation of the grazing schedule, consequences resulting from continuation of the current grazing schedule are likely to be similar to those discussed in the proposed action. There are no extensive or chronic big game-livestock forage competition issues known to occur on the permit area. Livestock use, as currently practiced by the permittee, is

largely compatible with continued improvement in herbaceous composition, reproduction, and vigor. Direct influences on big game are limited to localized reductions in herbaceous forage availability attributable to heavy use of pastures during or prior to periods of coincident big game use.

Continuation of the current management alternative would allow the permittee to maintain an open, undocumented grazing schedule. Non-documentation of livestock use precludes any legitimate monitoring and assessment of land health conditions and subsequently impedes determining what effects livestock use has on terrestrial wildlife and associated habitats.

Failure to designate a season of use and define livestock numbers may increase the potential for over-utilization of certain pastures. This could substantially reduce the availability and diversity of forage for big game and alter the composition and abundance of herbaceous ground cover (perennial grasses and forbs) for non-game species. While consequences of the current management practice may be similar to that of the proposed, it would be impossible to determine cause and effect without proper documentation. As it stands, BLM must rely on the decisions of the permittee whose objectives may differ from those of the BLM.

Environmental Consequences of the No Action Alternative: Removing livestock would substantially increase seasonal herbaceous expression across much of the permit area's bottomlands, however it is unlikely the approximately 2,946 acres of annual (cheatgrass and bur buttercup) dominated understories would recover during the span of the permit. Non-game mammals and birds would be expected to respond to increasing cover and forage bases with minor increases in pinyon-juniper communities and steep mountain shrub slopes. Increases would be most prominent in those areas favored by livestock that are grazed synchronous with the nesting season and bottomlands and mildly-sloped terrain. Livestock removal would also be expected to reduce use of heavy bunchgrass top growth, which would tend to slightly reduce big game access to grass growth in the spring, particularly by deer.

As discussed in the Aquatic Wildlife section, it is believed that a serious consequence of denying a livestock permit would be the dissolution of incentives for continued weed control by the livestock permittee.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): BLM-administered woodlands and shrublands encompassed by this allotment generally meet the land health standard for animal communities. It is expected that the no-action alternative could dramatically increase herbaceous expression within the allotment, in the short term, but expected trends in noxious weed proliferation would result in exponential increases in acreage failing to meet the standard in the long term.

Without intensive intervention, neither the no-action or grazing related alternatives would, in and of themselves, substantially reduce the extent of ranges not meeting the standard - approximately 2,946 acres of cheatgrass dominated understory. While this provides an abundant but short duration forage source in spring, these inclusions do not substantially impair winter forage conditions.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation		X	
Cadastral Survey	X		
Fire Management	X		
Forest Management			X
Geology and Minerals	X		
Hydrology/Water Rights			X
Law Enforcement		X	
Noise	X		
Paleontology		X	
Rangeland Management			X
Realty Authorizations		X	
Recreation		X	
Socio-Economics		X	
Visual Resources		X	
Wild Horses	X		

FOREST MANAGEMENT

Affected Environment: The following table lists the woodland community on allotments associated with the proposed action.

WOODLAND COMMUNITY BY ALLOTMENT

Allotment	Pinyon Juniper Acres	Percent of the allotment
Keystone	13,851	47%

Within the current land use plan all of the pinyon/juniper woodlands in the Crooked Wash/Deep Channel Geographic Reference Area (GRA) are classified as non-commercial based on productivity and harvest suitability. These woodlands are not considered in the decadal harvest for the White River Field Office, and will not be managed for commercial firewood production. Woodlands in this GRA are available for harvest by private individuals. The majority of harvesting is for fuel wood and fence posts. These woodlands are available for manipulation to enhance other resource values.

The allotment also contains isolated Douglas-fir stands on steep, north and west facing slopes. No inventory has been conducted to determine the acres of these stands but a rough estimate would place the acreage at less than 50 (acres). These stands generally contain large old trees (<200 years). The isolated nature of the stands prevents any opportunities for stand improvement or harvest.

Environmental Consequences of the Proposed Action: Livestock grazing in general has not been shown to adversely impact existing pinyon/juniper woodlands. Livestock grazing may play some role in increasing invasion of pinyon/juniper woodlands on sagebrush sites by decreasing the competitive nature of native plant communities. Grazing also decreases fine fuel loading decreasing the intensity and frequency of fires which would kill seedling and sapling trees. Under this alternative there would be an increase in the cover and composition of desired forage species which would compete with pinyon/juniper seedlings, decreasing the rate of invasion of sagebrush sites. There would be an increase in the litter and fine fuels increasing the frequency of fires which would limit the encroachment of pinyon/juniper woodlands into sagebrush types.

Douglas-fir stands would not be affected by grazing because of their isolated nature.

Environmental Consequences of the Continuation of Current Management Alternative: Invasion of pinyon/juniper into sagebrush associations would continue at the current rate. The lack of fire in sagebrush types would allow pinyon/juniper woodlands to dominate these sites over extended periods of time.

Douglas-fir stands would not be affected by grazing because of their isolated nature.

Environmental Consequences of the No Grazing Alternative: There would be a rapid increase in fine fuel loadings in the sagebrush types. Fire frequencies would go up significantly with sagebrush communities burning regularly. These fires are expected to carry into the pinyon/juniper associations creating stand-replacing fires. Over the long-term pinyon/juniper woodlands would be relegated to those areas that are fire resistant such as bluffs and areas containing rim-rock. The distribution of pinyon/juniper would be the same as before European influence.

Large scale stand replacing fires in the pinyon/juniper type are expected to carry into the heads of the draws and also remove the Douglas-fir stands.

Mitigation: None

HYDROLOGY AND WATER RIGHTS

Affected Environment: One perennial (P.106.51) and 2 seasonal springs (S.106.23, S.106.24) are situated within the allotment boundaries. All three sites are situated within the Pinto Gulch catchment area with P.106.51 being located in the headwaters of this watershed. These springs were inspected in the spring of 2005 and it was noted that due to the recent drought conditions that none of the three springs were flowing water. The following table (Table 1) outlines the location and water rights associated with the affected springs.

Table 1:

Map Code	Quarter	Sec#	Twp	Range	Water Right	SC	pH	Q (gpm)	Date
106-23	NESW	29	4N	96W	N/A	-	-	0	9/7/83
106-24	NESW	32	4N	96W	N/A	-	-	0	9/7/83
106-51	SESW	20	4N	96W	86CW99	Not measured	Not Measured	Not measured	8/25/85

The BLM has obtained water rights on all of the identified perennial springs. Typically water rights are not granted on springs that do not maintain a perennial flow. Additional monitoring by the BLM will be necessary to assess the functionality of existing spring developments and address the need for repair at specified locations.

Spring P.106.51 had signs of past development with nonfunctional pieces (old troughs and fencing material) of that development still at the site. Based on the geomorphic location of this spring and the potential for an increase in the elevation of the local ground water table as a result of several normal precipitation years this site may again see perennial flowing water.

Environmental Consequences of the Proposed Action: Livestock tend to congregate near perennial water sources resulting in significant reductions in vegetal cover and increased ground disturbance due to hoof action. Reduced ground cover in these areas leaves soils vulnerable to erosion increasing sediment loads down gradient. Spring P.106.51 has potential to support a lush riparian plant community with an increase in elevation of the local ground water table. Without proper enclosures the spring source could be deteriorated due to livestock/wildlife use.

Environmental Consequences of the Continuation of Current Management Alternative: Under the current management alternative the number of active AUMs is nearly the same as with the proposed action. However, with continuation of the current management alternative the BLM has no formal documentation of pasture rotation and use. Viable documentation of the number of active AUMs in each pasture at any given time is an essential variable necessary to accurately assess changes to land health conditions resulting from livestock use. The same environmental consequences may occur with continuation of the current management alternative but it will be much more difficult to accurately determine specific causes (e.g. livestock vs. wildlife impacts).

Environmental Consequences of the No Grazing Alternative: None

Mitigation: Spring developments must be maintained and all non-functional items (e.g. old water troughs, pipes, fence, etc…) must be removed and properly disposed of by the permit holder. Potential perennial water sources showing signs of adverse impacts due to livestock/wildlife should be fenced to allow the system to recover. Spring monitoring by the BLM must continue to evaluate the functionality of developments, assess water quality at spring sources, and maintain BLM water rights.

RANGELAND MANAGEMENT

Affected Environment: Keystone Ranch (0501489) is the authorized grazing permittee on the Keystone allotment (06605) and holds preference to the existing grazing permit. They also have agricultural leases on State lands occurring within the allotment. The first table below shows the livestock carrying capacity in Animal Unit Months (AUMs) broken down by BLM, State and private acres. The following tables are a further breakdown by soil unit polygons present in each pasture and AUMs produced by ecological site and by land ownership.

ACRES & AUM BREAKDOWN FOR KEYSTONE RANCH (KEYSTONE ALLOTMENT)

Combined Calculated Livestock Grazing Capacity									
Pasture	**BLM AUMs**	**State AUMs**	**Pvt AUMs**	**Total AUMs:**	**% PL**	**BLM Acres**	**State Acres**	**Pvt Acres**	**Total Acres**
Blue Haven	677	134	147	**958**	**71%**	6373	646	949	**7968**
Buck Pasture	109	0	78	**187**	**58%**	1655	0	581	**2236**
Hay Pasture B	18	0	104	**122**	**15%**	89	0	453	**542**
Indian Valley	426	0	832	**1258**	**34%**	2113	0	3930	**6043**
Kaiser/Citadel	658	74	82	**814**	**81%**	5101	637	757	**6495**
Pinto Gulch	765	18	237	**1020**	**75%**	5074	174	1347	**6595**
Ted's Gulch	654	0	123	**777**	**84%**	4660	0	607	**5267**
Twin Wash	556	140	106	**802**	**69%**	4533	648	575	**5756**
Totals:	**3863**	**366**	**1709**	**5938**	**61%**	**29598**	**2105**	**9199**	**40902**

KEYSTONE ALLOTMENT 06605 BLUE HAVEN PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM acres**	**Acres/AUM**	**BLM AUMs**
Abor Clay Loam,5-30%slopes	Clayey Foothills	611	8	76
Avalon-Mack complex,1-12%slopes	Semidesert Loam/Loamy Saltdesert	0	7	0
Badland	None	101	0	0
Debone loam,0-3%slopes	Alkaline Slopes	17	10	2
Forelle loam, 3-8%slopes	Rolling Loam	145	6	23
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	160	7	23
Gullied land	None	29	0	0
Kemmerer-Moyerson Silty Clay Loam,20-40%slope	Clayey Slopes/Clayey Slopes	201	8	24
Kobar silty clay cloam,3-8%slopes	Deep Clay Loam	560	3	219
Moyerson stony clay loam,15-65%slopes	Clayey Slopes	382	9	42
Patent loam,3-8%slopes	Rolling Loam	460	6	74
Piceance fine sandy loam,5-15%slopes	Rolling Loam	4	6	1
Price creek clay loam,0-4%slopes	Clayey Foothills	23	7	3
Redcreek-Rentsac complex,5-30%slopes	PJ woodlands/PJ woodlands	15	20	1
Rentsac channery loam,5-50%slopes	Pinyon Juniper woodlands	148	22	7
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	112	22	5
Rentsac-Moyerson-RockOutcrop,complex,5-65%slps	PJ Woodlands/Clayey Slopes	2735	22	124
Rentsac-Piceance complex,2-30%slopes	PJ woodland/Rolling Loam	17	20	1
Rock Outcrop	None	8	0	0
Tisworth fine sandy loam,0-5%slopes	Alkaline Slopes	46	8	6
Torrifluvents, gullied	None	195	0	0
Torriorthents-Baston Complex,3-12%slopes	Stoney Foothills/Shale 9-11	8	9	1
Torriorthents-Rock Outcrop, complex,15-90%slopes	Stoney Foothills	173	10	17
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	5	9	1
Torriorthents-Torripsamments complex, M Steep	Stoney Foothills	54	9	6
Typic Natrargids, 0-5%slopes	PJ Woodlands	34	20	2
Yamac Loam,2-15%slope	Rolling Loam	98	6	16
Yamo Loam, 3-5%slopes	Clayey Foothills	32	7	5
		6373		**677**

KEYSTONE - BLUE HAVEN PASTURE

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Abor Clay Loam,5-30%slopes	Clayey Foothills	35	5	7
Debone loam,0-3%slopes	Alkaline Slopes	29	5	6
Forelle loam, 3-8%slopes	Rolling Loam	123	5	0
Forelle loam,3-12%slopes	Rolling Loam	0	5	0
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	218	4	54
Gullied land	None	25	0	0
Kemmerer-Moyerson Silty Clay Loam,20-40%slope	Clayey Slopes/Clayey Slopes	73	6	13
Kobar silty clay cloam,3-8%slopes	Deep Clay Loam	20	2	10
Moyerson stony clay loam,15-65%slopes	Clayey Slopes	68	5	14
Patent loam,3-8%slopes	Rolling Loam	77	4	19
Piceance fine sandy loam,5-15%slopes	Rolling Loam	0	4	0
Price creek clay loam,0-4%slopes	Clayey Foothills	15	5	3
Redcreek-Rentsac complex,5-30%slopes	PJ woodlands/PJ woodlands	37	14	3
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	0	14	0
Rentsac-Moyerson-RockOutcrop,complex,5-65%slps	PJ Woodlands/Clayey Slopes	138	14	10
Rentsac-Piceance complex,2-30%slopes	PJ woodland/Rolling Loam	20	12	2
Rock Outcrop	None	16	0	0
Torrifluvents, gullied	None	7	0	0
Torriorthents-Baston Complex,3-12%slopes	Stoney Foothills/Shale 9-11	15	6	3
Torriorthents-Torripsamments complex, M Steep	Stoney Foothills	19	6	3
Typic Natrargids, 0-5%slopes	PJ Woodlands	10	14	1
Yamo Loam, 3-5%slopes	Clayey Foothills	3	5	1
		949		**147**

KEYSTONE BLUE HAVEN

Livestock Grazing Capacity - State Lands				
Soil Unit Name	**Ecological Site**	**State Acres**	**Acres/AUM**	**State AUMs**
Avalon-Mack complex,1-12%slopes	Semidesert Loam/Loamy Saltdesert	1	4	0
Debone loam,0-3%slopes	Alkaline Slopes	82	5	17
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	4	0	0
Gullied land	None	187	7	28
Kemmerer-Moyerson Silty Clay Loam,20-40%slope	Clayey Slopes/Clayey Slopes	294	4	70
Moyerson stony clay loam,15-65%slopes	Clayey Slopes	0	6	0
Patent loam,3-8%slopes	Rolling Loam	0	4	0
Pricecreek clay loam,0-4%slopes	Clayey Foothills	54	4	13
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	0	14	0
Torriorthents-Baston Complex,3-12%slopes	Stoney Foothills/Shale 9-11	10	6	2
Torriorthents-Torripsamments complex, M Steep	PJ woodlands	1	6	0
Yamo Loam, 3-5%slopes	Clayey Foothills	13	4	3
		646		**134**

KEYSTONE ALLOTMENT 06605 - BUCK PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/AUM**	**BLM AUMs**
Badland	None	16	0	0
Battlement Silt Loam, Saline, 0-3% slope	Salt Meadow	48	4	12
Cowestglen Loam,0-3%slopes	Foothill Swale	1	4	0

KEYSTONE ALLOTMENT 06605 - BUCK PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/AUM**	**BLM AUMs**
Ironsprings Loamy Sand,1-5%slopesII	Sandy Foothills	34	3	10
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	37	20	2
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	111	4	28
Rock Outcrop-Torriorthents Complex, Very Steep	None	74	20	4
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	555	11	50
Torriorthents-Rock Outcrop, Shale, Complex, steep	Stoney Foothills	5	9	1
Ustorthents, Frigid-Borolls Complex, steep	None	764	0	0
Weed sandy loam,1-12%slopes	Deep Loam	11	4	3
		1655		**109**

KEYSTONE BUCK PASTURE

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Badland	None	93	0	0
Battlement Fine Sandy Loam, 0-3% slope	Foothill Swale	10	4	3
Berlake sandy loam,12-25%slopes	Deep Loam	11	3	4
Bulkley-Quilt complex,12-45%slopes	Deep Clay Loam/Mountain Loam	52	4	13
Cowestglen Loam,0-3%slopes	Foothill Swale	135	4	34
Ironsprings Loamy Sand,1-5%slopesII	Sandy Foothills	2	3	1
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	84	15	6
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	15	2	7
Rock Outcrop-Torriorthents Complex, Very Steep	None	56	0	0
Torriorthents-Rock Outcrop ,Sandstone Complex, VS	Stoney Foothills	1	10	0
Ustorthents, Frigid-Borolls Complex, steep	None	85	0	0
Weed sandy loam,1-12%slopes	Deep Loam	38	3	13
		581		**78**

KEYSTONE ALLOTMENT 06605 HAY PASTURE B

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/AUM**	**BLM AUMs**
Berlake sandy loam,12-25%slopes	Deep Loam	3	4	1
Forelle-Evanston loams,1-12%slopes	Rolling Loam/Deep Loam	27	6	4
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	13	20	1
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	42	3	12
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	3	10	0
Weed sandy loam,1-12%slopes	Deep Loam	0	4	0
		89		**18**

Keystone Hay Pasture B				
Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Battlement Silt Loam, Saline,0-3%slope	Salt Meadow	2	3	1
Berlake sandy loam,12-25%slopes	Deep Loam	16	3	5
Forelle-Evanston loams,1-12%slopes	Rolling Loam/Deep Loam	242	4	58
Ironsprings Loamy Sand,1-5%slopesII	Sandy Foothills	9	3	3
Morapos-Pagoda complex,2-12%slopes	Deep Clay Loam/Mountain Loam	86	4	22
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	18	15	1
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	29	3	10
Torriorthents-Rock Outcrop ,Sandstone Complex, VS	Stoney Foothills	24	9	3

Keystone Hay Pasture B				
Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Ustorthents, Frigid-Borolls Complex, steep	None	16	0	0
Weed sandy loam,1-12%slopes	Deep Loam	8	4	2
		453		**104**

KEYSTONE ALLOTMENT 06605 INDIAN VALLEY PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/AUM**	**BLM AUMs**
Blazon, moist-Rentsac Complex,6-65%slopes	Pinyon-Juniper woodland	31	10	3
Bulkley-Abor clay loams,5-30%slopes	Clayey Foothills	3	7	0
Castner channery loam, 5-50%slopes	Pinyon-Juniper woodlands	6	10	1
Debone loam,0-3%slopes	Alkaline Slopes	65	6	11
Forelle loam, 3-8%slopes	Rolling Loam	10	3	3
Forelle loam, 8-15%slopes	Rolling Loam	30	3	10
Forelle loam,3-12%slopes	Rolling Loam	0	3	0
Glendive fine sandy loam	Foothills Swale	21	4	5
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	73	4	18
Gullied land	None	73	0	0
Havre loam,0-4%slopes	Foothill Swale	0	4	0
Kobar silty clay loam,0-3%slopes	Deep Clay Loam	309	3	103
Patent loam,3-8%slopes	Rolling Loam	448	3	149
Pricecreek clay loam,0-4%slopes	Clayey Foothills	41	7	6
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	19	11	2
Rentsac-Moyerson-RockOutcrop,complex,5-65%slps	PJ Woodlands/Clayey Slopes	361	11	33
Rentsac-Piceance complex,2-30%slopes	PJ woodland/Rolling Loam	297	11	27
Torrifluvents, gullied	None	129	0	0
Torriorthents-Rock Outcrop, complex,15-90%slopes	Stoney Foothills	49	9	5
Veatch channery loam,12-50%slopes	Loamy Slopes	148	3	49
		2113		**426**

KEYSTONE - INDIAN VALLEY

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Debone loam,0-3%slopes	Alkaline Slopes	76	6	13
Forelle loam, 3-8%slopes	Rolling Loam	21	3	7
Forelle loam, 8-15%slopes	Rolling Loam	672	3	224
Forelle loam,3-12%slopes	Rolling Loam	27	3	9
Glendive fine sandy loam	Foothills Swale	3	4	1
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	239	4	57
Gullied land	None	166	0	0
Havre loam,0-4%slopes	Foothill Swale	63	4	16
Kobar silty clay loam,0-3%slopes	Deep Clay Loam	331	3	110
Moyerson stony clay loam,15-65%slopes	Clayey Slopes	6	6	1
Patent loam,3-8%slopes	Rolling Loam	367	3	122
Pricecreek clay loam,0-4%slopes	Clayey Foothills	159	5	32
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	2	11	0
Rentsac-Moyerson-RockOutcrop,complex,5-65%slps	PJ Woodlands/Clayey Slopes	551	11	50
Rentsac-Piceance complex,2-30%slopes	PJ woodland/Rolling Loam	929	11	84
Torrifluvents, gullied	None	28	0	0
Torriorthents-Rock Outcrop, complex,15-90%slopes	Stoney Foothills	3	9	0
Typic Natrargids, 0-5%slopes	None	0	0	0

KEYSTONE - INDIAN VALLEY

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Yamac Loam,2-15%slope	Rolling Loam	288	3	96
Yamo Loam, 3-5%slopes	Clayey Foothills	0	5	0
		3930		**823**

KEYSTONE ALLOTMENT 06605 KAISER/CITADEL PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/ AUM**	**BLM AUMs**
Battlement Silt Loam, Saline,0-3%slope	Salt Meadow	13	4	3
Danavore-Waybe Complex,5-30%slopes	Dry Exposure/Dry Exposure	250	5	56
Grieves-Crestman-Complex,10-40%slopes	PJ woodlands/PJ woodlands	10	20	1
Ironsprings loamy sand,1-15%slopes	Sandy Foothills	74	4	19
Ironsprings Loamy Sand,1-5%slopesII	Sandy Foothills	0	4	0
Pricecreek clay loam,0-4%slopes	Clayey Foothills	84	5	17
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	265	20	13
Rhone Fine Sandy Laom,3-25 %slopes	Pinyon-Juniper woodlands	2	15	0
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	198	3	76
Silas-Loam,1-10%slopes	Mountain Swale	31	3	11
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	1657	9	184
Torriorthents-Rock Outcrop, Shale, Complex, Steep	Stoney Foothills	38	9	4
Ustorthents, Frigid-Borolls Complex, steep	None	1709	0	0
Winevada-Splitro Complex,25-65%slopes	Mountain Loam/Mountain Loam	61	3	22
Winevada-Splitro Complex,3-25%slopes	Mountain Loam/Mountain Loam	708	3	253
		5101		**658**

KEYSTONE KAISER/CITADEL

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Battlement Silt Loam, Saline,0-3%slope	Salt Meadow	4	4	1
Danavore-Waybe Complex,5-30%slopes	Dry Exposure/Dry Exposure	9	5	2
Grieves-Crestman-Complex,10-40%slopes	PJ woodlands/PJ woodlands	0	14	0
Ironsprings loamy sand,1-15%slopes	Sandy Foothills	122	3	37
Ironsprings Loamy Sand,1-5%slopesII	Sandy Foothills	4	3	1
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	22	14	2
Rhone Fine Sandy Laom,3-25 %slopes	Pinyon-Juniper woodlands	0	14	0
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	0	3	0
Silas-Loam,1-10%slopes	Mountain Swale	0	3	0
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	211	6	38
Torriorthents-Rock Outcrop, Shale, Complex, Steep	Stoney Foothills	0	6	0
Ustorthents, Frigid-Borolls Complex, steep	None	378	0	0
Winevada-Splitro Complex,3-25%slopes	Mountain Loam/Mountain Loam	3	3	1
Yamo Loam, 3-5%slopes	Clayey Foothills	4	4	1
		757		**82**

KEYSTONE KAISER

Livestock Grazing Capacity - State Lands				
Soil Unit Name	**Ecological Site**	**State Acres**	**Acres/AUM**	**State AUMs**
Chroder Sandy Loam, 3-12%slopes	Loamy Cold Desert	8	7	1
Ironsprings loamy sand,1-15%slopes	Sandy Foothills	82	3	25
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	66	3	22

KEYSTONE KAISER

Livestock Grazing Capacity - State Lands				
Soil Unit Name	**Ecological Site**	**State Acres**	**Acres/AUM**	**State AUMs**
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	34	6	6
Ustorthents, Frigid-Borolls Complex, steep	None	391	0	0
Winevada-Splitro Complex,3-25%slopes	Mountain Loam/Mountain Loam	57	3	20
		637		**74**

KEYSTONE ALLOTMENT 06605 PINTO GULCH PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/AUM**	**BLM AUMs**
Battlement Silt Loam, Saline,0-3%slope	Salt Meadow	32	4	8
Debone loam,0-3%slopes	Alkaline Slopes	0	7	0
Forelle loam,3-12%slopes	Rolling Loam	47	4	11
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	1414	4	339
Gullied land	None	109	0	0
Pinelli loam, 3-12%slopes	Clayey Foothills	110	6	18
Pricecreek clay loam,0-4%slopes	Clayey Foothills	847	6	141
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	1343	14	94
Rock River sandy loam,3-12%slopes	Rolling Loam	193	4	46
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	475	9	53
Torriorthents-Rock Outcrop, Shale ,Complex, Steep	Stoney Foothills	410	9	46
Typic Natrargids, 0-5%slopes	None	44	0	0
Yamo Loam, 3-5%slopes	Clayey Foothills	49	6	8
		5074		**765**

KEYSTONE - PINTO GULCH

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Battlement Silt Loam, Saline,0-3%slope	Salt Meadow	106	4	26
Debone loam,0-3%slopes	Alkaline Slopes	2	7	0
Forelle loam,3-12%slopes	Rolling Loam	42	4	10
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	440	4	106
Gullied land	None	217	0	0
Ironsprings loamy sand,1-15%slopes	Sandy Foothills	3	4	1
Pinelli loam, 3-12%slopes	Clayey Foothills	55	5	11
Pricecreek clay loam,0-4%slopes	Clayey Foothills	216	5	43
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	91	14	6
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	21	6	4
Torriorthents-Rock Outcrop, Shale, Complex ,Steep	Stoney Foothills	71	6	13
Typic Natrargids, 0-5%slopes	None	0	0	0
Yamo Loam, 3-5%slopes	Clayey Foothills	81	5	16
		1347		**237**

KEYSTONE - PINTO GULCH

Livestock Grazing Capacity - State Lands				
Soil Unit Name	**Ecological Site**	**State Acres**	**Acres/AUM**	**State AUMs**
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	0	4	0
Pinelli loam, 3-12%slopes	Clayey Foothills	0	5	0
Pricecreek clay loam,0-4%slopes	Clayey Foothills	41	5	8

KEYSTONE - PINTO GULCH

Livestock Grazing Capacity - State Lands				
Soil Unit Name	**Ecological Site**	**State Acres**	**Acres/AUM**	**State AUMs**
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	131	14	9
Torriorthents-Rock Outcrop, Shale, Complex, Steep	Stoney Foothills	2	6	0
		174		**18**

KEYSTONE 06605 TED'S GULCH PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/AUM**	**BLM AUMs**
Battlement Fine Sandy Loam, 0-3% slope	Foothill Swale	26	4	7
Battlement Silt Loam, Saline,0-3%slope	Salt Meadow	67	4	17
Blazon, moist-Rentsac Complex,6-65%slopes	Pinyon-Juniper woodland	292	14	20
Bulkley silty clay,12-25%slopes	Clayey Foothills	390	6	65
Bulkley-Abor clay loams,5-30%slopes	Clayey Foothills	346	6	58
Cowestglen Loam,0-3%slopes	Foothill Swale	46	4	11
Danavore-Waybe Complex,5-30%slopes	Dry Exposure/Dry Exposure	0	5	0
Forelle-Evanston loams,1-12%slopes	Rolling Loam/Deep Loam	0	4	0
Glendive fine sandy loam	Foothills Swale	8	4	2
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	265	4	64
Havre loam,0-4%slopes	Foothill Swale	8	4	2
Jerry-Thornburgh-Rhone complex,8-65%slopes	Brushy Loam/Brushy Loam	376	4	94
Maudlin-Duffymont Complex,3-15%slopes,VStoney	Mountain Loam/Loamy Breaks	63	4	16
Morapos-Pagoda complex,2-12%slopes	Deep Clay Loam/Mountain Loam	47	4	12
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	1139	14	80
Rentsac-Piceance complex,2-30%slopes	PJ woodland/Rolling Loam	28	14	2
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	475	4	119
Rock Outcrop-Torriorthents Complex ,Very Steep	None	51	0	0
Silas loam,1-10%slopes	Mountain Swale	7	4	2
Torriorthents-Rock Outcrop, complex,15-90%slopes	Stoney Foothills	31	9	3
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	685	9	76
Torriorthents-Rock Outcrop, Shale, Complex, Steep	Stoney Foothills	39	9	4
Ustorthents, Frigid-Borolls Complex, steep	None	268	0	0
Weed sandy loam,1-12%slopes	Deep Loam	1	4	0
		4660		**654**

KEYSTONE - TED'S GULCH

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Battlement Silt Loam, Saline,0-3%slope	Salt Meadow	59	4	15
Blazon, moist-Rentsac Complex,6-65%slopes	Pinyon-Juniper woodland	31	14	2
Bulkley silty clay,12-25%slopes	Clayey Foothills	29	5	6
Bulkley-Abor clay loams,5-30%slopes	Clayey Foothills	176	5	35
Cowestglen Loam,0-3%slopes	Foothill Swale	0	4	0
Forelle-Evanston loams,1-12%slopes	Rolling Loam/Deep Loam	1	4	0
Glendive fine sandy loam	Foothills Swale	63	4	16
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	17	4	4
Havre loam,0-4%slopes	Foothill Swale	31	4	8
Ironsprings Loamy Sand,1-5%slopesII	Sandy Foothills	5	3	1
Jerry-Thornburgh-Rhone complex,8-65%slopes	Brushy Loam/Brushy Loam	16	4	4
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	60	14	4
Rhone-Jerry complex,25-65%slopes	Brushy Loam/Brushy Loam	1	4	0

KEYSTONE - TED'S GULCH

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt AUMs**
Silas loam,1-10%slopes	Mountain Swale	13	3	4
Torriorthents-Rock Outcrop, complex,15-90%slopes	Stoney Foothills	18	6	3
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	26	6	5
Torriorthents-Rock Outcrop ,Shale Complex ,Steep	Stoney Foothills	2	6	0
Weed sandy loam,1-12%slopes	Deep Loam	59	4	15
		607		**123**

KEYSTONE ALLOTMENT 06605 TWIN WASH PASTURE

Livestock Grazing Capacity - BLM				
Soil Unit Name	**Ecological Site**	**BLM Acres**	**Acres/AUM**	**BLM AUMs**
Barcus channery loamy sand,2-8%slopes	Foothills Swale	28	4	7
Battlement Fine Sandy Loam, 0-3% slope	Foothill Swale	11	4	3
Blazon, moist-Rentsac Complex,6-65%slopes	Pinyon-Juniper woodland	523	14	37
Bulkley-Abor clay loams,5-30%slopes	Clayey Foothills	249	6	41
Forelle loam, 3-8%slopes	Rolling Loam	6	4	1
Forelle loam, 8-15%slopes	Rolling Loam	208	4	50
Forelle loam,3-12%slopes	Rolling Loam	29	4	7
Glendive fine sandy loam	Foothills Swale	122	4	31
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	292	4	70
Gullied land	None	29	0	0
Havre loam,0-4%slopes	Foothill Swale	136	4	34
Jerry-Thornburgh-Rhone complex,8-65%slopes	Brushy Loam/Brushy Loam	70	4	17
Kobar silty clay loam,0-3%slopes	Deep Clay Loam	59	4	15
Patent loam,3-8%slopes	Rolling Loam	131	4	31
Piceance fine sandy loam,5-15%slopes	Rolling Loam	16	4	4
Pricecreek clay loam,0-4%slopes	Clayey Foothills	12	6	2
Rentsac channery loam,5-50%slopes	Pinyon Juniper woodlands	391	14	27
Rentsac-Moyerson-Complex,25-65%slope	PJ woodlands/PJ woodlands	1	14	0
Rentsac-Moyerson-RockOutcrop,complex,5-65%slps	PJ Woodlands/Clayey Slopes	760	14	53
Rentsac-Piceance complex,2-30%slopes	PJ woodland/Rolling Loam	650	14	46
Rock Outcrop	None	13	0	0
Torrifluvents, gullied	None	188	0	0
Torriorthents-Rock Outcrop, complex,15-90%slopes	Stoney Foothills	312	9	35
Torriorthents-Rock Outcrop, Sandstone Complex ,VS	Stoney Foothills	220	9	24
Ustorthents, Frigid-Borolls Complex, steep	None	1	0	0
Veatch channery loam,12-50%slopes	Loamy Slopes	77	4	21
		4533		**556**

KEYSTONE - TWIN WASH

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt Acres**
Battlement Fine Sandy Loam, 0-3% slope	Foothill Swale	0	4	0
Blazon, moist-Rentsac Complex,6-65%slopes	Pinyon-Juniper woodland	1	14	0
Bulkley-Abor clay loams,5-30%slopes	Clayey Foothills	0	5	0
Forelle loam,3-12%slopes	Rolling Loam	8	4	2
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	243	4	58
Gullied land	None	110	0	0
Havre loam,0-4%slopes	Foothill Swale	66	4	17
Pricecreek clay loam,0-4%slopes	Clayey Foothills	94	4	22
Rentsac-Piceance complex,2-30%slopes	PJ woodland/Rolling Loam	19	14	1

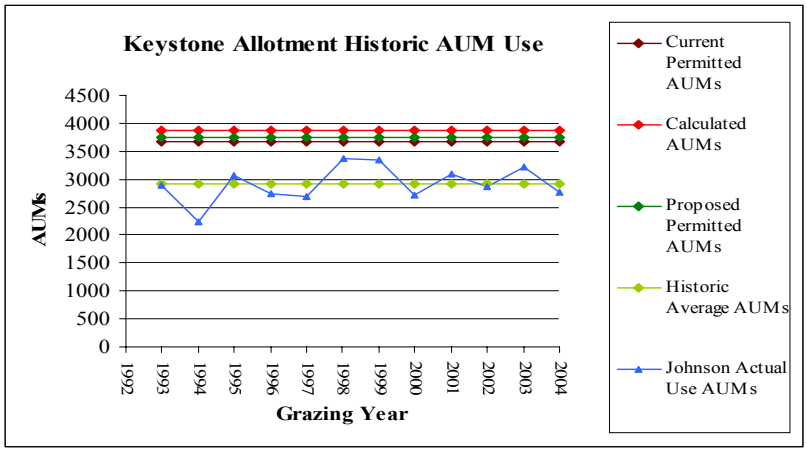
KEYSTONE - TWIN WASH

Livestock Grazing Capacity - Private Lands				
Soil Unit Name	**Ecological Site**	**Pvt Acres**	**Acres/AUM**	**Pvt Acres**
Torriorthents-Rock Outcrop, complex,15-90%slopes	Stoney Foothills	32	6	6
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	0	6	0
Ustorthents, Frigid-Borolls Complex, steep	None	3	0	0
		575		**106**

KEYSTONE - TWIN WASH

Livestock Grazing Capacity - State Lands				
Soil Unit Name	**Ecological Site**	**State Acres**	**Acres/AUM**	**State AUMs**
Battlement Fine Sandy Loam, 0-3% slope	Foothill Swale	18	4	4
Forelle loam,3-12%slopes	Rolling Loam	43	4	10
Grieves-Yamo-Crestman assoc,3-45%slope	Rolling Loam/Clayey Foothills/Sandy Juniper	311	4	74
Gullied land	None	12	0	0
Pinelli loam, 3-12%slopes	Clayey Foothills	33	5	7
Pricecreek clay loam,0-4%slopes	Clayey Foothills	147	5	29
Torriorthents-Rock Outcrop, Sandstone Complex, VS	Stoney Foothills	85	6	15
		648		**140**

The table below reflects current permitted AUMs, calculated AUMs, proposed AUMs, historic average use, and annual actual use (based on actual use reports) for the Keystone allotment permitted to Keystone Ranch. The grazing year begins March 1st and ends February 28th. The apparent slight increase in AUMs under the proposed action is a result of adjustments made in the percent public land. There is no actual increase in livestock grazing. If the percent public land had not been adjusted the proposed AUMs would be the same as current permitted AUMs.



Environmental Consequences of the Proposed Action: Refer to the Vegetation Section of this document for an analysis of rangeland vegetation impacts. Under the proposed grazing schedule livestock grazing would continue to occur at generally the same level it has been for the past ten years with some minor adjustments in dates and livestock numbers. The proposed grazing schedule will provide documentation of actual livestock use in each pasture and allow for improved monitoring based on known use in each pasture. Better documentation and tracking will improve future decision making regarding stocking rates.

Dave Johnson of the Keystone Ranch was instrumental in development of the proposed action so

it is anticipated that the management of the rangelands by Keystone Ranch will not be significantly impaired by implementation of the proposed action. Implementation of the proposed action will enhance rangeland management in terms of meeting Public Land Health Standards in the future.

Environmental Consequences of the Continuation of Current Management Alternative: Refer to the Vegetation section of this document for an analysis of rangeland vegetation impacts. The current authorized grazing schedule allows maximum flexibility for the permittee during the grazing period but with that goes a higher potential for over-utilization in any given pasture. Under the current management alternative monitoring livestock grazing use in each pasture is entirely reliant on accurate actual-use reporting by the permittee. Lacking this information, interpreting cause and effect related to long-term trend monitoring would not be possible.

Environmental Consequences of the No Grazing Alternative: Under this alternative, Keystone Ranch would not have the ability to authorize the existing grazing permit (0501489). Forage produced on private lands owned by Keystone Ranch accounts for approximately 44% of the total forage on the Keystone allotment. Generally private lands are not fenced separately from BLM administered lands and it would not be economically feasible to do so. Without the adjoining BLM grazing permit, Keystone Ranch would not be able to make use of the privately held forage. Lacking use of forage produced on BLM administered lands Keystone Ranch would not have a viable livestock operation.

Mitigation: Emphasize accomplishment and documentation of long-term trend monitoring and utilization monitoring to determine effectiveness of proposed grazing schedule to promote sound decision making related to future stocking rates and pasture rotations.

REALTY AUTHORIZATIONS

Affected Environment: The grazing allotment involves private, public administered, and Colorado State lands. Colorado State Land Board properties are: 6th Principal Meridian, T.4N. R.96W. section 16; T.3N. R.96W. section 16; T.3N. R.97W. section 16; and T.4N. R.97W. a portion of section 36; as indicated on the allotment map.

Environmental Consequences of the Proposed Action: none

Environmental Consequences of the Continuation of Current Management Alternative: none

Environmental Consequences of the No Grazing Alternative: none

Mitigation: Assure that appropriate authorization for those portions of the allotments occurring on Colorado State lands is maintained for the life of the proposed BLM grazing permit.

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts from the proposed action would not exceed those discussed in the White River Resource Area RMP and/or White River Resource Area Grazing Management Environmental Impact Statement (EIS).

REVERENCES CITED:

Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division (APCD), 2005. "Colorado Air Quality Data Report – 2004," September 2005.

Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC), 2004a. Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin. Adopted 1983 and Effective January 20, 2004.

CDPHE-WQCC, 2004b. "Status of Water Quality in Colorado – 2004, The Update to the 2002 305(b) Report," April.

CDPHE-WQCC, 2004c. "Regulation No. 93, 2004 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs," effective May 31.

CDPHE-WQCC, 2004d. "Regulation No. 94, Colorado's Monitoring and Evaluation List," effective May 31.

USDI Bureau of Land Management, Colorado. 1997. White River Record of Decision and Approved Resource Management Plan (ROD/RMP). Meeker, Colorado.

PERSONS / AGENCIES CONSULTED: A Public Notice of the NEPA action is posted on the WRFO Internet website at the Colorado BLM Home Page asking for public input on Grazing Permit renewals and the assessment of public land health standards within the WRFO area. Local notification is published in the Rio Blanco Herald Times newspaper located here in Meeker, Colorado on a monthly basis. The Grazing Advisory Board was notified of impending Grazing Permit renewals. Also, individual letters are sent to the lessees/permittees informing them that their lease is up for renewal and request any information they want included in or taken into consideration during the renewal process.

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Gabrielle Elliott	Archeologist	Cultural Resources, Paleontological Resources
Mary Taylor	Rangeland Mgmt. Specialist	Invasive, Non-Native Species
Lisa Belmonte	Wildlife Biologist	Migratory Birds
Ed Hollowed	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa Kindall	Hazmat Collateral	Wastes, Hazardous or Solid
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground, Hydrology and Water Rights
Mary Taylor	Rangeland Mgmt. Specialist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Mary Taylor	Rangeland Mgmt. Specialist	Soils
Mary Taylor	Rangeland Mgmt. Specialist	Vegetation
Lisa Belmonte	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Mary Taylor	Rangeland Mgmt. Specialist	Rangeland Management
Linda Jones	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Chris Ham	Outdoor Recreation Planner	Visual Resources
Valerie Dobrich	Natural Resource Specialist	Wild Horses

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2005-101-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to implement the proposed action; to renew the grazing permit for Keystone Ranch (0501489) for a period of ten years and to approve the allotment management plan, as described in the proposed action, with the addition of the mitigation listed below.

MITIGATION MEASURES:

1. Allow pastures to receive appropriate rest from livestock grazing as outlined in the proposed action.

2. Appropriate mitigation measures may be identified in consultation with Colorado SHPO within the ten-year period of this permit. It is recommended that a renewal be issued for this permit subject to the allotment specific stipulations contained in the information forms.

3. Managed grazing and aggressive rehabilitation and re-vegetation efforts (including aerial and drill seeding with adapted species immediately following wildfire events) following disturbances such as wildfire will be applied to limit the spread and establishment of cheatgrass. This same aggressive management will apply to re-vegetation of soil disturbances.

4. The permittee shall be required to collect and properly dispose of any solid wastes generated by the proposed action.

5. Continue monitoring of plant community condition to help identify if additional actions are needed to comply with the *Clean Water Act*. In addition, monitoring of stream channel morphology (Rosgen survey data) will be essential to evaluate the impacts of livestock/wildlife in the allotment.

6. Stocking rates and grazing in riparian systems at moderate levels allowing for adequate re-growth opportunities. A minimum stubble height of four inches should be maintained on riparian vegetation. While fencing off portions of these streams is not part of this proposal, it should be an option if future riparian conditions should warrant it. However, the proposed

grazing schedule and stocking rates should result in maintenance or improvement of these riparian systems.

7. Continue long-term trend monitoring, rangeland health evaluations and make necessary adjustments to livestock management practices to meet resource objectives.

8. Spring developments must be maintained and all non-functional items (e.g. old water troughs, pipes, fence, etc...) must be removed and properly disposed of by the permit holder. Potential perennial water sources showing signs of adverse impacts due to livestock/wildlife should be fenced to allow the system to recover. Spring monitoring by the BLM must continue to evaluate the functionality of developments, assess water quality at spring sources, and maintain BLM water rights.

9. Emphasize accomplishment and documentation of long-term trend monitoring and utilization monitoring to determine effectiveness of proposed grazing schedule to promote sound decision making related to future stocking rates and pasture rotations.

10. Assure that appropriate authorization for those portions of the allotments occurring on Colorado State lands is maintained for the life of the proposed BLM grazing permit.

NAME OF PREPARER: Mary Taylor

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

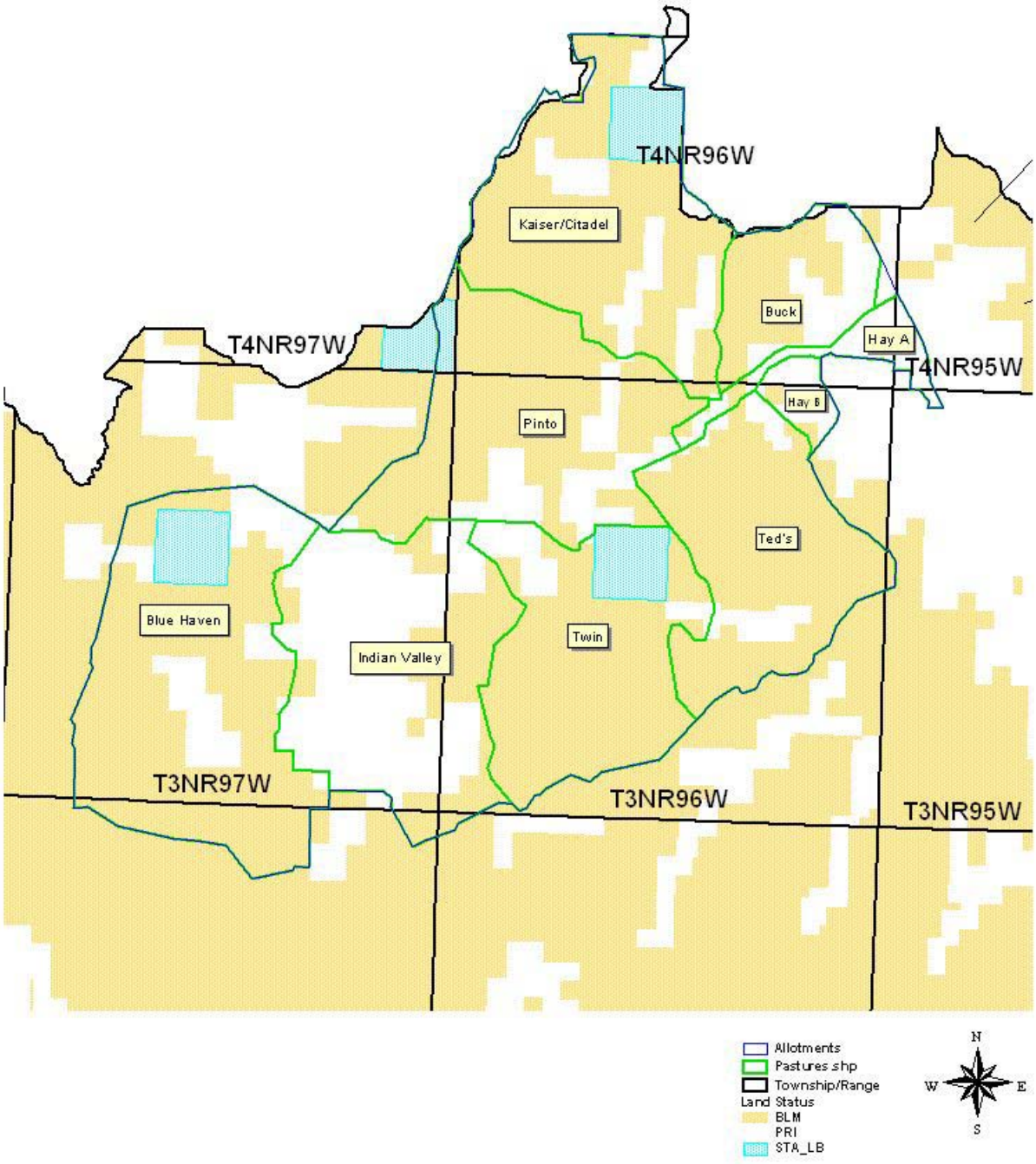
SIGNATURE OF AUTHORIZED OFFICIAL: _____
Field Manager

DATE SIGNED: 6/14/06

ATTACHMENTS: Map of Keystone Allotment
Location map of the proposed action

CO-110-2005-101-EA 49

Keystone Allotment (06605)



Location of Proposed Action
CO-110-2005-101-EA